

NOTICES OF FINAL RULEMAKING

The Administrative Procedure Act requires the publication of the final rules of the state's agencies. Final rules are those which have appeared in the *Register* first as proposed rules and have been through the formal rulemaking process including approval by the Governor's Regulatory Review Council or the Attorney General. The Secretary of State shall publish the notice along with the Preamble and the full text in the next available issue of the *Register* after the final rules have been submitted for filing and publication.

NOTICE OF FINAL RULEMAKING

TITLE 6. ECONOMIC SECURITY

CHAPTER 7. DEPARTMENT OF ECONOMIC SECURITY CHILD SUPPORT ENFORCEMENT

[R05-406]

PREAMBLE

1. Sections Affected

Article 4
R6-7-401
R6-7-402
R6-7-403
R6-7-404
R6-7-405
R6-7-406

Rulemaking Action

New Article
New Section
New Section
New Section
New Section
New Section
New Section

2. The statutory authority for the rulemaking, including both the authorizing statute (general) and the statutes the rules are implementing (specific):

Authorizing statute: A.R.S. §§ 41-1954(A)(3); 41-1954 (A)(1)(c)

Implementing statute: 42 U.S.C. § 652 (k)(1); 42 U.S.C. § 654 (31); A.R.S. § 46-403

3. The effective date of the rules:

December 17, 2005

4. A list of all previous notices appearing in the *Register* addressing the final rule:

Notice of Rulemaking Docket Opening: 10 A.A.R. 4120, October 8, 2004

Notice of Proposed Rulemaking: 11 A.A.R. 745, February 18, 2005

5. The name and address of agency personnel with whom persons may communicate regarding the rulemaking:

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6. An explanation of the rule, including the agency's reason for initiating the rule:

These rules establish the procedures and criteria for the passport denial process for an obligor who has a child support arrearage that qualifies for certification under federal statute. Title IV-D agencies, which operate child support programs, are required by 42 U.S.C. § 652 (k)(1) to have a procedure for certifying that an obligor has a child support arrearage that qualifies for certification under federal statute to the United States Secretary of Health and Human Services for passport denial. The United States Secretary of Health and Human Services sends the certification to the United States Secretary of State, who has authority to refuse to issue a passport, or revoke, restrict, or limit a passport that was previously issued. These rules conform to federal requirements. Passport denial is another mechanism that Title IV-D agencies can use to enforce collection of child support arrearages.

All Title IV-D cases in which the obligor has a child support arrearage, in amount governed by federal statute for federal income tax refund offset and federal administrative offset, are automatically submitted for passport denial. The Title IV-D Agency must provide notice to an obligor who has a child support arrearage that qualifies for certification

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under federal statute that the obligor will be certified for passport denial. The notice informs the obligor of the right to request an administrative review. The rules provide the conditions under which the Title IV-D agency may withdraw certification for passport denial status and indicate how an obligor may appeal the Title IV-D Agency's determination at the administrative review.

- 7. A reference to any study relevant to the rule that the agency reviewed and either relied on in its evaluation of or justification for the rule or did not rely on in its evaluation of or justification for the rule, where the public may obtain or review each study, all data underlying each study, and any analysis of each study and other supporting material:**

The agency did not review any studies relating to these rules.

- 8. A showing of good cause why the rule is necessary to promote a statewide interest if the rule will diminish a previous grant of authority of a political subdivision of this state:**

Not applicable

- 9. The summary of the economic, small business, and consumer impact:**

The economic, small business and consumer impact statement for the passport denial rules analyzes the costs and benefits of this rulemaking on the Title IV-D Agency, the Division of Child Support Enforcement, and its contracting entities, child support obligees and obligors, and the business community. The economic impact of adoption of these proposed rules on the Title IV-D Agency is minimal.

The rules benefit obligors in Title IV-D child support cases by providing clear procedures regarding the operation of the passport denial process, indicate how an obligor may file for an administrative review, how certification for passport denial may be withdrawn, and how to appeal a Title IV-D Agency action. The impact on the procedures, operation, and costs of the Division of Child Support Enforcement is minimal. No costs are imposed by the federal government on Title IV-D agencies for submittal and certification of obligees for the passport denial process. Internal procedures have been established for this process.

The Department incurs minimal costs to operate the passport denial process, including the certification process to submit the names of obligors for passport denial. Because the process leads to the collection of a substantial amount of past due support in Title IV-D cases, the process has a beneficial impact on families. In some cases the state also collects assigned arrearages through the passport denial process, providing financial support for the Title IV-D program. For this reason, the process also has a beneficial impact on the state.

The passport denial process requires a Title IV-D Agency to certify an obligor's arrearages to the United States Secretary of Health and Human Services if the arrearages qualify for certification under federal statute. This certification is submitted to the United States Secretary of State, who has authority to withdraw a passport. If the arrearages qualify for certification under federal statute, the obligor in most cases is required to make payments to the Title IV-D Agency in order for certification of the passport denial to be withdrawn.

These rules will not impose additional costs or requirements on small businesses and consumers. In Title IV-D cases in which an obligor has a child support arrearage that qualifies for certification under federal statute, and the obligor is unwilling to enter into a payment plan or pay the arrearage in full, small travel-related businesses could be negatively impacted due to an obligor's inability to obtain a passport to travel.

Support monies received by obligees as a result of the passport denial process may be spent in the business sector for various services or products. The economic impact of the expenditure of Title IV-D support monies received on the private sector may be substantial, but cannot be quantified.

The Department of Economic Security has incurred minimal costs to write policies and procedures on passport denial and to operate a passport denial process. These rules will not impose additional costs or requirements on small businesses and consumers.

- 10. A description of the changes between the proposed rules, including supplemental notices, and final rules (if applicable):**

Nonsubstantive changes and a mistake, R6-7-404(C)(3), were corrected.

- 11. A summary of the comments made regarding the rule and the agency response to them:**

The Department did not receive any comments on the rules.

- 12. Any other matters prescribed by statute that are applicable to the specific agency or to any specific rule or class of rules:**

Not applicable

- 13. Incorporations by reference and their location in the rules:**

None

- 14. Was this rule previously made as an emergency rule?**

No.

15. The full text of the rules follows:

TITLE 6. ECONOMIC SECURITY

**CHAPTER 7. DEPARTMENT OF ECONOMIC SECURITY
CHILD SUPPORT ENFORCEMENT**

ARTICLE 4. ~~RESERVED~~ PASSPORT DENIAL

Section

<u>R6-7-401.</u>	<u>Definitions</u>
<u>R6-7-402.</u>	<u>Certification and Criteria</u>
<u>R6-7-403.</u>	<u>Notice</u>
<u>R6-7-404.</u>	<u>Administrative Review</u>
<u>R6-7-405.</u>	<u>Withdrawal of Certification for Passport Denial</u>
<u>R6-7-406.</u>	<u>Appeal from Administrative Review</u>

ARTICLE 4. ~~RESERVED~~ PASSPORT DENIAL

R6-7-401. Definitions

The following definitions apply in this Article unless otherwise provided in a specific Section of this Article:

1. "Certification" means to furnish OCSE with the name, identifying information, and amount of the arrearage owed by an individual determined delinquent in fulfilling a child support obligation.
2. "Federal administrative offset" means the interception of certain federal payments in order to collect past-due child support. Based on the Debt Collection Improvement Act (DCIA) of 1996, the process is managed by the Federal Office of Child Support Enforcement (OCSE), through the Financial Management Service (FMS) of the Department of the Treasury, in conjunction with the Federal Tax Refund Offset Program.
3. "Passport denial" means the certification process followed by the Title IV-D Agency and the United States Secretary of State, to refuse to issue a passport or to revoke, restrict, or limit a passport that was previously issued, because the obligor in a Title IV-D case has an arrearage in an amount that qualifies for certification under federal statute.
4. "Secretary" means the United States Secretary of State.
5. "Title IV-D case" means a proceeding for support managed by the Title IV-D Agency as required by Title IV-D of the Social Security Act, 42 U.S.C. 651 et seq.

R6-7-402. Certification and Criteria

A. The Title IV-D Agency shall:

1. Submit and certify to OCSE for passport denial any Title IV-D case with an arrearage that qualifies for certification under federal statute; and
2. Refer the case to OCSE for federal income tax refund offset and federal administrative offset under federal statute.

B. The Title IV-D Agency shall submit and certify a case for passport denial if the case meets both of the following criteria:

1. A support obligation has been established by a court or an administrative order; and
2. The arrearage is in an amount that qualifies for certification under federal statute.

C. The Title IV-D Agency shall not submit the following cases for passport denial:

1. Interstate cases in which the obligee receives temporary assistance for needy families and the state of Arizona does not have an assignment of rights.
2. Cases in which federal law precludes action.

R6-7-403. Notice

A. The Title IV-D Agency shall provide written notice to an obligor that the obligor has a support arrearage in an amount that qualifies for certification under federal statute, and that the obligor has been referred for federal administrative offset, federal income tax refund offset, and passport denial.

B. The Title IV-D Agency shall send the notice to an obligor by first class mail. The mailing of the notice to the obligor's last known address of record with Title IV-D Agency constitutes proper and sufficient notice.

C. The notice shall inform the obligor of the right to contest the enforcement action.

R6-7-404. Administrative Review

A. An obligor may file a written request for administrative review by the Title IV-D Agency within thirty business days from the date on the notice mailed in accordance with R6-7-403.

B. An obligor has the burden of proof regarding each issue raised in an administrative review.

C. The issues in an administrative review are limited to:

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1. Whether there has been a mistake regarding the identity of the obligor; and
2. The amount of the obligor's arrearage, if any.
- D.** If an obligor alleges that there has been a mistake regarding the identity of the obligor, the Title IV-D Agency shall issue a final written determination by first class mail to all parties within two business days after receipt of the request for administrative review.
- E.** For all circumstances other than a mistake regarding the identity of the obligor, the Title IV-D Agency shall issue a final written determination by first class mail to all parties within 45 business days after receipt of the request for administrative review, or if additional information is required and provided, 45 business days after receipt of this information.
- F.** In an interstate case, only the certifying state has the authority to withdraw an obligor from the passport denial process.
- G.** If an obligor does not request an administrative review within 30 business days, the Title IV-D Agency's certification for purposes of passport denial remains in effect.
- H.** If an obligor requests an administrative review within thirty business days and meets the requirements for withdrawal of certification for passport denial in R6-7-405, the Title IV-D Agency shall notify OCSE to withdraw certification for passport denial in accordance with OCSE requirements.

R6-7-405. Withdrawal of Certification for Passport Denial

- A.** The Title IV-D Agency shall notify OCSE to withdraw certification for passport denial for an obligor if one or more of the following applies:
 1. The Title IV-D Agency makes a final determination during an administrative review that:
 - a. The case does not meet the criteria for passport denial in R6-7-402; or
 - b. There has been a mistake regarding the identity of the obligor;
 2. The obligor has paid the arrearage down to:
 - a. An amount less than the amount that qualifies for certification under federal statute, and has entered into a payment agreement with the Title IV-D Agency; or
 - b. Zero; or
 - c. An amount agreed to by the Title IV-D Agency, if the arrearage is owed to both the state and the obligee, provided the obligor agrees to and complies with any other terms required by the Title IV-D Agency, and the provisions of R6-7-405 (B).
- B.** The Title IV-D Agency shall also notify OCSE to withdraw certification for passport denial for an obligor if all of the following apply:
 1. The obligee agrees to accept partial payment of the total arrearages owed by the obligor to the obligee, even though the payment does not comply with the requirements of R6-7-405 (A)(2) to pay arrearages down to zero or an amount less than that which qualifies for certification under federal statute;
 2. The obligor and obligee agree to the amount of the partial payment in writing, and the document is signed by both parties and submitted to the Title IV-D Agency;
 3. The Title IV-D Agency advises the obligee that the Title IV-D Agency may not have the opportunity to request passport denial for another 10 years;
 4. The obligee provides the Title IV-D Agency with a signed, notarized statement acknowledging receipt of the advisement in subsection (3) before the notification to OCSE to withdraw certification for passport denial;
 5. The obligor enters into a payment agreement with the Title IV-D Agency for the remainder of the arrearages owed; and
 6. The Title IV-D Agency consents to the agreement between the obligor and the obligee.
- C.** The Title IV-D Agency shall notify OCSE by facsimile, computer, or other electronic or non-electronic means to withdraw certification for passport denial, in accordance with OCSE requirements.
- D.** If an obligor fails to comply with the terms of any payment agreement with the Title IV-D Agency, and the arrearage qualifies for certification under federal statute, the Title IV-D Agency shall re-certify the obligor to OCSE for passport denial.

R6-7-406. Appeal from Administrative Review

A Title IV-D Agency determination made under this Article is subject to judicial review under A.R.S. Title 12, Chapter 7, Article 6 (Judicial Review of Administrative Decisions), or other applicable law.

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TITLE 18. ENVIRONMENTAL QUALITY

**CHAPTER 9. DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER POLLUTION CONTROL**

[R05-354]

PREAMBLE

<u>1. Sections Affected</u>	<u>Rulemaking Action</u>
R18-9-101	Amend
R18-9-103	Amend
R18-9-104	Amend
R18-9-105	Amend
R18-9-106	Amend
R18-9-107	Amend
R18-9-108	Amend
R18-9-109	Amend
R18-9-110	Amend
R18-9-A201	Amend
R18-9-A202	Amend
R18-9-A203	Amend
R18-9-A204	Amend
R18-9-A205	Amend
R18-9-A206	Amend
R18-9-A207	Amend
R18-9-A208	Amend
R18-9-A209	Amend
R18-9-A210	Amend
R18-9-A211	Amend
R18-9-A212	Amend
R18-9-A213	Amend
R18-9-A214	New Section
R18-9-B201	Amend
R18-9-B202	Amend
R18-9-B203	Amend
R18-9-B204	Amend
R18-9-B205	Amend
R18-9-B206	Amend
R18-9-A301	Amend
R18-9-A303	Amend
R18-9-A304	Amend
R18-9-A305	Amend
R18-9-A306	Amend
R18-9-A307	Amend
R18-9-A309	Amend
R18-9-A310	Amend
R18-9-A311	Amend
R18-9-A312	Amend
R18-9-A313	Amend
R18-9-A314	Amend
R18-9-A315	Amend
R18-9-A316	Amend
R18-9-A317	New Section
R18-9-B301	Amend
R18-9-C301	Amend
R18-9-C302	Amend
R18-9-C303	Amend
R18-9-C304	Amend
R18-9-C305	New Section
R18-9-C306	New Section
R18-9-D301	Amend

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R18-9-D302	Amend
R18-9-D303	Amend
R18-9-D304	Amend
R18-9-D305	Amend
R18-9-D306	Amend
R18-9-D307	Amend
R18-9-E301	Amend
R18-9-E302	Amend
R18-9-E303	Amend
R18-9-E304	Amend
R18-9-E305	Amend
R18-9-E306	Amend
R18-9-E307	Amend
R18-9-E308	Amend
R18-9-E309	Amend
R18-9-E310	Amend
R18-9-E311	Amend
R18-9-E312	Amend
R18-9-E313	Amend
R18-9-E314	Amend
R18-9-E315	Amend
R18-9-E316	Repeal
R18-9-E316	New Section
R18-9-E317	Amend
R18-9-E318	Amend
R18-9-E319	Amend
R18-9-E320	Amend
R18-9-E321	Repeal
R18-9-E321	New Section
R18-9-E322	Amend
R18-9-E323	Amend
Table 1	Amend
Article 4	Amend
R18-9-401	Amend
R18-9-402	Amend
R18-9-403	Amend
R18-9-404	New Section

2. The statutory authority for the rulemaking, including both the authorizing statute (general) and the statutes the rules are implementing (specific):

Authorizing statutes: A.R.S. §§ 49-104(A)(10), (B)(10), (B)(13), 49-203(A)(3), (A)(4), (A) (7), (A) (10), (A) (11)

Implementing statutes: A.R.S. §§ 49-241 through 49-252

3. The effective date of the rules:

November 12, 2005

4. A list of all previous notices appearing in the Register addressing the final rule:

Notice of Rulemaking Docket Opening: 10 A.A.R. 1629, April 23, 2004

Notice of Proposed Rulemaking: 11 A.A.R. 142, January 7, 2005

5. The name and address of agency personnel with whom persons may communicate regarding the rulemaking:

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6. An explanation of the rule, including the agency's reason for initiating the rule:

GENERAL EXPLANATION OF THIS RULEMAKING

The Aquifer Protection Permit (APP) Program is Arizona's keystone program for protecting groundwater quality. Significant rule revisions were adopted in 2001 to restructure the APP program by reducing duplicative reviews, adding numerous general permits, and adopting a permitting approach for on-site wastewater treatment facilities that relies on performance standards. Since adoption of the APP rules in 2001, the Department has conducted numerous stakeholder outreach events, convened stakeholder groups, and accepted comments on suggested rule revisions from many sources.

Because much of the language in the 2001 rule amendment addressed permitting and technical requirements for on-site wastewater treatment facilities (septic tank/disposal field systems and alternative systems), the Department formed the On-site Wastewater Advisory Committee (OWAC) in October 1999 to provide a forum to discuss technical issues related to on-site wastewater treatment facilities. OWAC has 15 members representing a cross section of interests including: an alternative system manufacturer, a homeowner, a realty-professional, several service providers, several delegated agencies, a university researcher, a registered sanitarian, and others. In addition to these members, the Department notifies a group of more than 100 interested parties to keep them informed of the meeting schedules and activities of the committee.

Since 2001, OWAC has continued to discuss issues and provide recommendations and comments on the proposed rule revisions to the Department. Nineteen formal meetings of OWAC have been held since the 2001 rule adoption with numerous smaller, informal sessions during that same time period. In addition to OWAC, another group was formed in Pima County by the Pima County Department of Environmental Quality to conduct similar discussions and provide recommendations to the Department during the current rule development effort.

In December 2001 and January 2002, the Department held "listening sessions" across the state to hear how the changes made to the APP rules in early 2001 impacted stakeholders. Based on that feedback and on the input on on-site wastewater treatment facilities from OWAC and the Pima County group, the Department prepared a draft rewrite and a synopsis of the proposed changes to the APP rules at 18 A.A.C. 9, Articles 1, 2, 3, and 4. This draft was released to stakeholders by e-mail and posted on the Department's web site. The informal comment period began on April 28, 2004 and the Department accepted comments through May 28, 2004. During this informal comment period, the Department hosted public meetings to explain how earlier comments were addressed in the April 28th draft and to accept feedback from stakeholders.

Following completion of this informal comment period, the Department developed a summary of the first draft comments. The Department next developed a second draft of the rules and released this draft for another period of informal comment on August 16, 2004. Comments on the second draft were accepted through noon, September 22, 2004. After the second informal comment period had ended, the Department again held public meetings throughout the state to explain the changes the Department planned to make to the rule as a result of all received comments. In summary, three rounds of public meetings were held in Flagstaff, Phoenix, Lake Havasu City, Yuma, and Tucson.

This rulemaking builds on the foundation established in the 2001 APP rule. During finalization of that rule, a number of comments were presented at the Governor's Regulatory Review Council (G.R.R.C.) hearing concerning the nitrogen management provisions of the rule. At the direction of the G.R.R.C., the Department removed that portion of the rule and committed to do more work in this area before the next rule revision. Nitrate is the most widespread groundwater contaminant in Arizona, and nitrogen sources threaten or continue to pollute groundwater with nitrate. It is with this overall goal in mind that the Department designed the nitrogen management aspects of this rulemaking. This rulemaking adds new provisions as well as changes existing provisions intended to reduce or eliminate sources of nitrogen pollution to groundwater including:

- On-Site Wastewater Treatment Facilities – enhances the performance-based approach; expands pre-sale inspection program to all on-site systems; adds a new general permit for technology that is highly effective in removing nitrogen;
- Nitrogen Management Area Designation Process – modeled after the Department's Source Water Protection program to address areas of existing or potential contamination of groundwater by nitrate, often due to dense septic tank concentrations; establishes process and criteria for designation;
- Capacity, Management, Operations and Maintenance (CMOM) Plans for Sewage Collection Systems – provides a voluntary approach with incentives for maintenance and response to spills that will result in reduction of sewage discharges onto the land surface or into the subsurface through leaky sewer lines; and
- Concentrated Animal Feeding Operation (CAFO) General Permit Revision – emphasizes liner performance for manure and process wastewater impoundments and updates the rule by incorporating the latest Natural Resource Conservation Service (NRCS) guidelines.

On-Site Wastewater Treatment Facilities

Many of the changes in this rulemaking deal with on-site wastewater treatment facilities. In Arizona, on-site wastewater treatment facilities provide sewage treatment and disposal to an estimated 400,000 to 500,000 households, or almost 20 percent of the state's population. More than 11,000 new systems a year are being approved under the Department's current APP rules. An on-site wastewater treatment facility poses a threat to public health and water quality if not designed, constructed, and operated properly. Dense concentrations of on-site wastewater treatment systems have caused and threaten to cause nitrate contamination of groundwater at many locations throughout Arizona. For this reason, many changes to the on-site wastewater treatment facility provisions in this rulemaking ultimately enhance protection of public health and water quality. Several changes are specifically intended to prevent or mitigate the potential for nitrate contamination of groundwater.

This rulemaking expands the pre-sale inspection program in R18-9-A316 to cover transfers of property that contain on-site wastewater treatment facilities that were constructed before January 1, 2001. The pre-sale inspection program currently applies only to on-site wastewater treatment facilities constructed on or after January 1, 2001. The expanded program for transfer inspections will begin on July 1, 2006. The pre-sale inspection program ensures that septic tanks are pumped at the time of the property transfer. In addition, the inspection will identify other maintenance or repairs needed to ensure effective operation of the system. This program provides significant benefits to the property owner by reducing the chance of septic tank failure and extending the lifetime of the facility. It enhances the operational effectiveness of the system, thus minimizing the possibility that sewage effluent will reach the surface and cause a public health hazard. Finally, by ensuring an effectively operating system, the threat of groundwater contamination is reduced.

The Department intends that the pre-sale inspection program will rely on the actions of private parties, i.e., it is the buyer and seller rather than governmental entities that will follow the requirements of the program, and will promote inspection, repair, and disclosure about the operational condition of an on-site wastewater treatment facility at the time of property transfer. By this approach, the benefits of public health protection, improved water quality and prolonged system life will be achieved at essentially no cost to the public sector. Already, the standard Arizona Association of Realtors® contract for property sales, used widely throughout Arizona, includes a provision for septic tank inspection and pumping as part of seller/buyer disclosure. These inspections are widely considered to be beneficial, but they lack comprehensiveness and consistency across the state. In this rulemaking, the Department establishes consistent inspection requirements and documentation. The Department expects that most maintenance and repairs to on-site systems, and hence operations and maintenance (O&M) and environmental benefits that will accrue, will remain outside of the view of the regulatory agencies as a natural consequence of seller/buyer disclosure negotiations that take place at the time of a property transfer. In this regard, the Department's rule fosters system repairs and improvements in the same way that other deficiencies of a property are dealt with at the time of sale and provides the required change of ownership information to the Department without resource-intensive regulation and enforcement.

To ensure consistency of pre-sale inspections across the state, this rulemaking also specifies that persons interested in performing the transfer of ownership inspection must meet certain professional qualifications and successfully complete a training course that is approved by the Department. The Department already has approved a course developed jointly by the National Association of Waste Transporters and the University of Arizona and expects other providers to develop similar courses.

In addition to the Nitrogen Management Area provisions described separately in the next section, this rulemaking addresses nitrogen management in three other circumstances. First, the rule specifies in R18-9-E323 that nitrogen controls must be incorporated for large on-site wastewater treatment facilities. These facilities generate from 3,000 to less than 24,000 gallons per day of wastewater compared to a typical household that generates less than 600 gallons per day. Second, in R18-9-A309(A)(8)(c), nitrogen controls are specified for certain new subdivisions that will rely on on-site wastewater treatment facilities for wastewater disposal and treatment rather than sewerage. Finally, this rulemaking provides a new general permit at R18-9-E316 for a nitrate-reactive media filter system. This is a relatively new treatment technology for on-site wastewater treatment facilities that is highly effective at removing nitrogen from wastewater while maintaining benefits of simplicity and economy.

Nitrogen Management Area Designation Process

The Department is aware of areas across the state where the cumulative loading of sources of nitrogen contributes to or causes a violation of the Aquifer Water Quality Standard (AWQS) for nitrate in an aquifer. These sources of nitrogen include individual on-site wastewater treatment facilities, usually where dense concentrations of septic tanks are present. To address the cumulative impacts from these sources, R18-9-A317 includes a process by which the Department may designate areas where additional controls are needed for nitrogen sources. The process described in R18-9-A317 consists of the Department: 1) analyzing a long list of criteria to determine whether designation of a Nitrogen Management Area is justified, 2) proposing a preliminary Nitrogen Management Area designation if warranted by the analysis, and 3) soliciting comment from local town, city, and county authorities and affected sanitary districts. Based on comments, the Department may either designate a Nitrogen Management Area "as is" or with boundary modifications, or may withdraw the proposal.

The Nitrogen Management Area provisions apply to facilities covered by general permits. Within a designated Nitrogen Management Area, use of nitrogen removal technologies will be required for new installations of on-site waste-

water treatment facilities or replacements of failed septic tank systems. Agricultural operations will be required to use the best control measure to reduce nitrogen discharge when implementing best management practices in 18 A.A.C. 9, Article 4. The Department will require reassessment of liner performance at existing impoundments serving concentrated animal feeding operations (CAFOs) within the designated area. Finally, the Department may specify other nitrogen control provisions appropriate to the area.

Capacity, Management, Operations and Maintenance (CMOM) Plans for Sewage Collection Systems

In response to incidents of releases from sewage collection systems, this rulemaking includes a new Type 2 General Permit (2.05 General Permit at R18-9-C305) to address releases. Currently, under the 4.01 General Permit, releases from sewage collection systems are prohibited. Studies show that, on occasion, sewage is released from even the best operated sewage collection systems. The intent of the 2.05 General Permit is to allow the owner or operator of a sewage collection system to develop a Capacity, Management, Operations, and Maintenance (CMOM) Plan for the system that addresses operation and maintenance, capacity improvements, and spill response. In exchange for choosing to operate under this general permit, in the case of a spill or sanitary sewer overflow (SSO), the Department has flexibility in determining the nature of its compliance response, if any, based on a set of criteria established in the general permit. This permit borrows concepts from a draft regulation, by the Environmental Protection Agency regarding sewer overflows. The Department anticipates that owners and operators of sewage collection systems will avail themselves of this general permit, which requires them to continuously implement the measures in their CMOM Plan, in exchange for the compliance flexibility the permit affords to the Department. Under the measures established in the CMOM Plan, SSOs onto the land surface and leakage out of sewer lines to the subsurface will be minimized, greatly reducing threats to public health and contamination of surface waters and groundwater by nitrate, pathogenic organisms, and other pollutants.

Nitrogen Management General Permit: Concentrated Animal Feeding Operations

The owner or operator of a CAFO must operate impoundments under the APP program as required by A.R.S. § 49-241(B). The Department developed agricultural general permits in January 1991 (originally in 18 A.A.C. 9, Article 2 and now in 18 A.A.C. 9, Article 4). A.R.S. § 49-247 provides a framework for the general permit that relies on best management practices (BMPs) determined to be “the most practical and effective means of reducing or preventing the discharge of pollutants.” The Best Management Practices Advisory Committee was formed to develop the BMPs that were published in the Best Management Practices Handbook in 1988 (1988 BMP Handbook). The revisions in this rulemaking follow the BMPs for regulated agricultural activities contained in this publication.

Consistent with the focus of this rulemaking, the Department revisited implementation of the BMPs to determine whether adequate protection of groundwater quality was being achieved. The Department drafted changes to the general permit to emphasize liner performance of impoundments at CAFOs to minimize or eliminate potential nitrogen discharges to groundwater. The Department convened a group of interested parties to discuss the suggested rule revisions and to address their concerns about the rule. The first meeting of this stakeholder group was held May 17, 2004. During discussions with stakeholders, it was determined that attention will focus on liner performance for all new impoundments designed to hold processed wastewater and contact stormwater. The adequacy of liner performance will rely on NRCS guidelines. These guidelines replaced and updated the USDA-Soil Conservation Service Bulletin referenced in the 1988 BMP handbook.

For existing impoundments, a list of criteria was developed to use in determining when reassessment of liner effectiveness is required. The rulemaking includes a process by which the Department may determine, based on criteria developed by the stakeholder group, that the liner of an existing impoundment requires reassessment. Additionally, if the CAFO is within a designated Nitrogen Management Area, reassessment of existing impoundment liner performance will automatically be required because the criteria that trigger reassessment will have been considered in the course of designating the Nitrogen Management Area. The Department will provide written notification to the CAFO owner or operator of the need to conduct the reassessment and to report the results to the Department. Based on this report, the Department will make a preliminary decision whether to require lining of the impoundment and provide the permittee with an opportunity to comment before the Department makes a final decision. Many CAFOs have moved in recent years due to encroachment of residential development. If the CAFO will move within a relatively short period of time (less than 5 years), then requiring retrofitting of existing impoundments may not be reasonable.

CAFOs are also regulated under the CAFO General Permit AZG2004-002. This general permit, issued under the Arizona Pollutant Discharge Elimination System (AZPDES), requires the implementation of BMPs and development of a nutrient management plan (NMP) for the use and disposal of manure, litter, and process wastewater. This permit allows discharges to surface water in the event of a very large storm if the proper BMPs are in place. Because CAFOs are regulated by the Department under two different permitting programs and to prevent duplication of reporting, the Department provides an option to submit liner information required under this rule with the annual report required under the AZPDES general permit.

In addition to the changes to enhance nitrogen management, this rulemaking:

- Makes several changes to Articles 1 and 2 dealing with the individual permitting process requirements including revisions to the financial assurance capability demonstration under R18-9-A203;
- Provides an option for monitoring *E. coli* organisms at a sewage treatment facility, which may be more eco-

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- nomical than the current requirement for monitoring fecal coliform;
 - Adds seven new general permits and expands coverage for other general permits under Article 3;
 - Modifies investigation, design, and installation requirements for on-site wastewater treatment facilities under Article 3; and
 - Enhances the requirements for sewage collection systems under R18-9-E301.
- Justification for each change is provided under specific sections listed below.

SPECIFIC SECTION BY SECTION EXPLANATION

ARTICLE 1. AQUIFER PROTECTION PERMITS -- GENERAL PROVISIONS

R18-9-101. Definitions

This rulemaking makes minor, conforming, or editorial changes to the following definitions: “aggregate,” “Aquifer Protection Permit,” “design flow,” “final permit determination,” “Groundwater Quality Protection Permit,” “intermediate stockpile,” “Notice of Disposal,” “operational life,” “process solution,” “sewage collection system,” and “waters of the United States.”

The terms “chamber technology,” “CMOM Plan,” “Nitrogen Management Area,” and “seasonal high water table” are used within the rulemaking and have been added to this Section.

The term “daily flow rate” is no longer used in this rulemaking and has been deleted from this Section.

This rulemaking revises the definition of “alert level” to match the authority in A.R.S. § 49-243(K)(7). Currently the definition of “alert level” is too restrictive when compared to the statutory authority. The current definition restricts an alert level to:

- A numeric value,
- A value expressed in concentration, and
- A value established to provide early warnings of a potential violation of an AWQS at the point of compliance OR a permit condition.

A.R.S. § 49-243(K) states that “[t]he director shall consider and may prescribe in the permit the following terms and conditions as necessary to ensure compliance with this article;” and A.R.S. § 49-243(K)(7) states that “[a]lert levels which, when exceeded, may require adjustments of permit conditions or appropriate actions as are required by the contingency plans.”

The purpose of the Aquifer Protection Permit program can be briefly summarized by two points: 1) the requirement to employ technology to reduce or eliminate the discharge of pollutants through the use of Best Available Demonstrated Control Technology (BADCT); and 2) the requirement to protect aquifers for drinking water use. The purpose of a permit is to ensure that both these goals are achieved. The definition in the 2001 rule limits the use of alert levels to protecting aquifer water quality. The Department does not agree that use of alert levels must be limited to measuring compliance with Aquifer Water Quality Standards at the point of compliance nor does the statute provide such limitation.

The purpose of setting alert levels for discharge limitations is to assess the performance of BADCT. Alert levels trigger contingency actions on the part of the permittee to adjust BADCT technology operations to ensure that discharge limits are not exceeded, which would result in the permit being violated. In addition to setting numeric alert levels for discharge limits and AQLs, the Department has used alert levels for operational conditions that measure the performance of BADCT. An operational condition such as “maintaining 2 feet of freeboard in an impoundment” is measurable. Clearly, less than 2 feet of freeboard would result in a fluid elevation being “exceeded” and falls within the statutory authority. However, it is much easier for a permittee to measure freeboard in an impoundment than to measure the fluid elevation or volume. Similarly, alert levels can trigger action when a fluid elevation in a piezometer or sump is exceeded. Other operational conditions can have alert levels set in the same way to trigger actions that ensure BADCT is maintained.

This rulemaking adds the definition of “AQL” (aquifer quality limit), a term used in APPs. Based on current practice, Department staff develops and sets AQLs in permits when the applicant or permittee supplies an adequate amount of ambient groundwater quality data, generally eight or more rounds (a statistically significant data set). Once the groundwater data are collected, the permittee or Department staff will calculate appropriate AQLs for the point of compliance. The AQL is set at the Aquifer Water Quality Standard (AWQS) when the concentration of a pollutant in the aquifer is less than the AWQS under A.R.S. § 49-243(B)(2). The AQL is based on the statistical evaluation of a pollutant’s concentration in the aquifer if that pollutant already exceeds the AWQS under A.R.S. § 49-243(B)(3).

This rulemaking adds the definition of “AZPDES.” In December 2002, EPA approved the AZPDES program as the National Pollutant Discharge Elimination System (NPDES) program in Arizona, but not within Tribal Lands in Arizona. All NPDES permits became AZPDES permits on the date of approval, therefore the references to “NPDES” is no longer applicable.

The term “bedroom” is used in the rules when dealing with the requirements for the design of an on-site wastewater treatment facility for a dwelling. The Department defined this term to provide more guidance in determining the size and design flow of an-site wastewater sewage treatment facility.

This rulemaking revises the definition of “disposal works” to clarify that the term does not include activities relating to the reuse of reclaimed water covered under 18 A.A.C. 9, Article 7.

This rulemaking adds a definition of “dwelling” to clarify which structures are subject to the various design flow provisions in R18-9-A312 and in Table 1. The Department includes “an apartment unit” and “a condominium unit” to emphasize that a dwelling is an individual residence and not an apartment building or condominium building.

This rulemaking adds a definition of “homeowner’s association” and includes the definition of “person” from Arizona Revised Statutes with the exception that a homeowner’s association is excluded. These definitions are necessary to provide the basis for excluding a homeowner’s association (HOA) from qualifying as a permittee for a sewage treatment facility. The current rules allow any person to be a permittee if that person meets the demonstrations for technical capability and financial capability and the other application requirements. The Department has determined that a HOA is unqualified to be issued an individual permit for a sewage treatment facility. At the time the developer is transferring ownership of a development, the developer will need to sell or transfer the sewage treatment facility to a private or public utility that is qualified to operate the facility instead of turning it over to the HOA. A HOA may be able to qualify to be a permittee for other types of facilities; this rulemaking only prohibits an HOA from obtaining an individual APP issued for a sewage treatment facility. In the other cases, the HOA will need to meet the permitting requirements before the Department will grant coverage.

This rulemaking adds a definition of “land treatment facility,” a term used at A.R.S. § 49-241(B)(4) and highlights that biosolids drying, processing, or composting facilities are included.

This rulemaking makes minor changes to the definition of “sewage” and adds language to clarify that the term does not include reclaimed water that is reused according to 18 A.A.C. 9, Article 7. If the treated wastewater is not reused according to 18 A.A.C. 9, Article 7, its disposal must comply with APP requirements.

This rulemaking revises the definition of “sewage treatment facility” to clarify that the sewage treatment facility does not include a sewage collection system or a reclaimed water distribution system. This change is necessary because a sewage collection system is regulated under other parts of the APP rule and a reclaimed water distribution system is regulated under 18 A.A.C. 9, Article 6.

This rulemaking adds a definition of “treatment works” to clarify the use of the term in the requirements for on-site wastewater treatment facilities in Article 3 and to distinguish it from the term “disposal works.” This definition was inadvertently omitted from the 2001 rule.

This rulemaking revises the definition of “typical sewage” to clarify that this term only applies to on-site wastewater treatment facilities and to add language to describe the expected maximum level of total nitrogen that will be found in typical sewage.

R18-9-103. Class Exemptions

This rulemaking makes editorial changes to the introductory subsection of R18-9-103 and adds a reference to 18 A.A.C. 9, Article 9 to R18-9-103(4). The reference to 18 A.A.C., 9, Article 9 is needed because, although primary requirements are included in 18 A.A.C. 9, Article 10, the application of biosolids may also be subject to 18 A.A.C. 9, Article 9. (See R18-9-A902(C)(2))

R18-9-104. Transition from Notices of Disposal and Groundwater Quality Protection Permitted Facilities

This rulemaking revises this Section to emphasize the responsibility of a person who owns, operates, or operated a facility covered by a Notice of Disposal (NOD) or Groundwater Quality Protection Permit (GWQPP) to submit an application for an APP. The changes include:

- Deleting subsection (A). This language is obsolete because any person operating a facility under a NOD or a GWQPP should have submitted an application for an APP permit or closure to the Department because the NOD and GWQPP programs were replaced by the APP program.
- Adding the word “operates.” This addition is necessary to clarify that an owner is not necessarily an operator and that any person who operates a facility under a NOD or GWQPP is responsible for submitting an application for an APP. The term “operates” is necessary because some discharging facilities authorized under a NOD or GWQPP are no longer active but the past operator is responsible for closing the facility properly, including obtaining an APP to close if necessary.
- Deleting the phrase “or who owns or operates a facility required to obtain an Aquifer Protection Permit.” This language is not needed because those persons are covered by 18 A.A.C. 9, Article 2.
- Adding the last sentence to clarify that anyone operating under a NOD or a GWQPP must obtain an APP permit and that failure to do so will mean non-compliance because coverage under an NOD or GWQPP is no longer extended. The Department is aware of persons who own or operate facilities operating or previously operated under an NOD or a GWQPP and who have not submitted an application for an APP (operating or closure) or a clean closure for the facilities.

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The Department has the authority to require past operators to “close” the facility because of the following definitions of “existing facility,” “closed facility,” and “new facility” found in A.R.S. § 49-201.

“Existing facility” means a facility on which construction began before August 13, 1986 and which is neither a new facility nor a closed facility. . . . A.R.S. § 49-201(16)

“Closed facility” means:

- a. A facility that ceased operation before January 1, 1986, that is not, on August 13, 1986, engaged in the activity for which the facility was designed and that was previously operated and for which there is no intent to resume operation.*
- b. A facility that has been approved as a clean closure by the director.*
- c. A facility at which any postclosure monitoring and maintenance plan, notifications and approvals required in a permit have been completed. A.R.S. § 49-201(7)*

“New facility” means a previously closed facility that resumes operation or a facility on which construction was begun after August 13, 1986 on a site at which no other facility is located or to totally replace the process or production equipment that causes the discharge from an existing facility.... A.R.S. § 49-201(22)

This rulemaking retains language referring to past operators because, in some cases, a facility although no longer operating, met the definition of “existing facility” or “new facility” and was subject to APP requirements including closure. If the facility did not close under an APP permit or meet clean closure requirements, then it is not a “closed facility” according to A.R.S. § 49-201(7), and therefore must comply with APP requirements.

R18-9-105. Permit Continuance

This rulemaking makes an editorial change to the Section title and changes to subsections (A) and (B) to coincide with the changes to R18-9-104. Subsection (C)(1) has been deleted because of language in the new R18-9-A214. This rulemaking also deletes subsection (C)(2) because the language is no longer applicable. Approvals to Construct (ATCs) expired two years after the issuance period and the last ATC was issued before January 1, 2001. In addition, the language in subsection (D) has been moved to R18-9-A211(D)(2)(l) because the rule provision references a reason for an “Other” amendment that should be located in R18-9-A211.

R18-9-106. Determination of Applicability

This rulemaking makes editorial changes to subsections (B) and (D). This rulemaking adds a new subsection (E) to state that the Department may determine that an operation or activity is subject to the APP rules without that determination being initiated by a request. If the Department makes the determination that an APP is required, the owner or operator of that operation or activity is required to submit an application for APP coverage or closure plan and do so within 90 days of the notification. Ninety days is an appropriate time-frame for requiring submittal of the application or closure plan and is consistent with other rule provisions (see R18-9-105, Permit Continuance). The language in subsection (E) applies to any facility that did not submit a “determination of applicability” (DOA) request, and therefore did not receive a notification under subsection (C). If an owner or operator came in for a DOA and the Director made a determination under subsection (C), then any future issue will be addressed under subsection (D). The new subsection (E) applies to any operating facility. For any facility that is “proposed,” the owner or operator must obtain permit coverage before the facility operates or discharges. If the facility is not built or built but never operates, then the owner or operator is not required to apply for permit coverage.

R18-9-107. Consolidation of Aquifer Protection Permits

This rulemaking revises the statement in subsection (A) to more accurately reflect what is consolidated. The Department issues general permits by rule, but authorizes the discharge under a general permit for a particular entity. In other words, the entity operating under a general permit is not “issued a general permit,” rather the Department issues a discharge authorization for the facility. The Department does not “consolidate” an individual permit with a general permit. If appropriate, the authorization or authorizations to discharge for the general permit will be consolidated into the individual permit for the entity.

R18-9-108. Public Notice

This rulemaking adds an option to notify entities by electronic means (subsection (A)(1)) and updates the Department’s web site address (subsection (A)(3)).

R18-9-109. Public Participation

This rulemaking revises this Section to specify the logical order of actions:

- Comment period and possible hearing (subsections (A) and (B)),
- Compilation and response to comments in writing (subsection (C)),
- Issuance of decision and notification about the availability of the decision and responsiveness summary (subsection (D)).

The Department interprets the term “respond in writing” in the new subsection (C) to include, at a minimum, the generation of a responsiveness summary document or writing response letters to each commenter. This rulemaking adds

the option for the Department to electronically send the notice of amendment and the responsiveness summary to interested persons.

R18-9-110. Inspections, Violations, and Enforcement

This rulemaking makes editorial change to subsection (A).

ARTICLE 2. AQUIFER PROTECTION PERMITS -- INDIVIDUAL PERMITS

PART A. APPLICATION AND GENERAL PROVISIONS

R18-9-A201. Individual Permit Application

This rulemaking makes an editorial change to the Section title and to subsection (A).

This rulemaking adds “land treatment facility” to the list of categories needing an individual permit. The term is listed as a categorical discharger (a facility required to be permitted under the APP program) in A.R.S. § 49-241(B)(4). The rulemaking explicitly states that “land treatment facility” includes facilities that dry, process, or compost biosolids. Land application of biosolids, as a beneficial soil amendment, performed according to 18 A.A.C. 9, Article 10 is not included in this term.

This rulemaking makes several changes to subsection (B). This rulemaking deletes the requirement that an individual supply his or her social security number on the APP application. The rulemaking revises the information needed for environmental permits under R18-9-A201(B)(1)(f). The changes clarify that the applicant shall provide the permit number for federal or state environmental permits issued to the applicant “for that facility or site.” In addition, the rulemaking replaces the reference to “the financial information required in R18-9-A203” in subsection (B)(5) with a specific listing of the types of information the applicant must submit to fulfill the financial requirements (to demonstrate financial capability). Most of the language is from the current R18-9-A203(A)(1) and (2). The applicant must develop and submit estimates for construction, operation, maintenance, closure, and post-closure costs. The applicant must be able to come up with a cost estimate from one or more of the following sources: competitive bids, construction plan take-offs, specifications, operating history for similarly situated plants, or other appropriate sources. The Department understands that the cost figures for closure or post-closure are estimates that could be very broad or general and the accuracy of the estimates will depend on the level of detail in the closure plan or closure strategy submitted with the application.

Within subsection (B)(6)(a), this rulemaking requires the applicant for a sewage treatment facility to submit documentation that the sewage treatment facility or expansion conforms with the Certified Areawide Water Quality Management Plan and the Facility Plan, informally known as the regional 208 Plan, under 18 A.A.C. 5. No sewage treatment facility may be constructed or expanded unless in compliance with 18 A.A.C. 5, Article 3. Under the existing rule in R18-9-B201(H), which is deleted in this rulemaking, the documentation only had to be received by the Department before it published its Notice of Preliminary Decision to issue the Aquifer Protection Permit. This is an untenable approach for the Department within the framework of licensing time-frames in 18 A.A.C. 1. Therefore, the applicant must now demonstrate that the permit application complies with R18-5-303 in the beginning of the process. This rulemaking adds a reference within subsection (B)(6)(b) to R18-9-B203 because of changes to R18-9-B202 and B203.

This rulemaking moves the language currently in R18-9-A201(A)(3) to a new subsection (C) and adds a reference to A.R.S. § 45-802.01(21) that defines “underground storage facility.”

This rulemaking makes conforming and editorial changes to subsections (E), (F) and (G).

R18-9-A202. Technical Requirements

The majority of changes to this Section are editorial or conforming in nature. In subsection (A)(4)(c), a requirement is added for the applicant to supply a map outlining the pollutant management area for the facility. This map is necessary to meet the statutory requirement of A.R.S. § 49-244 to define the point of compliance using the pollutant management area.

This rulemaking adds language to subsection (A)(6)(b) to state that as part of the point of compliance (POC) demonstration, if an AWQS is exceeded in the aquifer, the applicant must provide an ambient groundwater monitoring report as part of the application. The Ambient Groundwater Monitoring Report is necessary only if the applicant believes that the AWQS for a pollutant is exceeded in the aquifer at the time of permit issuance. Information on the quality of ambient groundwater is necessary if the applicant believes that the ambient concentration of a pollutant already exceeds the AWQS. To demonstrate this, the Department is requiring the results from eight or more samples. If data are not available before permit issuance, the Department may include a requirement within the permit to collect necessary information – in the meantime, the applicant/permittee is still responsible for ensuring that the facility does not cause or contribute to a violation of an AWQS at the point of compliance. The details can be worked out during the application process before the permit is issued. In general, the Department recommends that the applicant perform and collect the data up-front if the applicant intends to demonstrate compliance with A.R.S. § 49-243(B)(3). Alternatively, the Department may choose to use limited information available at the time of permit issuance to set AQLs. For an application that was submitted years ago, the Department will view collecting more recent data as a

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negotiated item when reviewing the application. It is in the applicant's best interest to submit updated information to demonstrate that standards are already exceeded at the POC.

This rulemaking revises the hydrogeologic study requirement in subsection (A)(8)(b)(viii) by adding language to specify that the Department may require that the applicant for an underground storage permit evaluate whether the discharge will "cause the migration of contaminated groundwater." If the discharge is in an area with contaminated groundwater, the Department may require the applicant to evaluate the potential for the discharge to mobilize that contaminated groundwater and submit the information with the application. In general, contaminated groundwater is groundwater that exceeds an AWQS. The Department's concern is that such migration might impair the use of the aquifer or endanger human health. The applicant should work with a hydrologist or other qualified person to assess whether the recharge project could cause the migration of contaminated groundwater. In general, the applicant should:

- Consider the hydraulic response of the aquifer to the recharge facility's discharge to assess whether migration is caused by the facility,
- Identify plumes or areas of contaminated groundwater within the discharge impact area of the facility, and
- Show that the facility's discharge will not cause migration of the poor quality groundwater so that an AWQS will be exceeded at a point of use of the aquifer that will otherwise remain unimpacted.

Depending on the conclusions from the assessment, the impact of a discharge on plume migration may be subject to permit conditions, discharge limitations, alert levels, etc. Some underground storage facilities are exempt under A.R.S. § 49-250. A.R.S. § 45-811.01(C)(5) addresses the issue of plume migration for recharge projects exempted from APP.

In addition, this rulemaking adds a separate condition that requires the submission of closure and post-closure strategies or plans in subsection (A)(10) because the requirement to address these areas in a "detailed proposal" in subsection (A)(9) was not appropriate.

R18-9-A203. Financial Requirements

This rulemaking revises the approach to demonstrating financial capability because of implementation issues that have arisen since January 2001. The Department identified some deficiencies in the rule based on situations with permittees. For simplicity and because the majority of changes are relating to format, the language in this Section has been entirely rewritten and new language has been added for the financial requirements.

As mentioned earlier, this rulemaking moves the language currently in subsections (A)(1) and (2) to the application requirements in R18-9-A201(B)(5) and the introductory language currently in subsection (A) to subsection (B).

This rulemaking adds definitions that apply to this Section for the terms "face amount," "net working capital," "substantial business relationship," "book net worth," and "tangible net worth." The definitions for "face amount" and "net working capital" are from EPA's regulations on closure of Hazardous Waste Treatment, Storage, and Disposal Facilities at 40 CFR 264.143(e)(3) and 264.141(f), respectively. The definition of "substantial business relationship" is based on the federal definition at 40 CFR 264.141(h). The following definition for "tangible net worth" was derived based on Generally Accepted Accounting Principles.

"Tangible net worth" means an owner or operator's book net worth, plus subordinated debts, less goodwill, patent rights, royalties, and assets and receivables due from affiliates or shareholders."

Based on the definition in 40 CFR 264.141(f), "tangible net worth" does not include assets carried on the financial statements that are intangible. For clarity, this rulemaking does not use the term "intangible assets" but instead defines what assets fall into that category. The definition includes a specific list of items that are "intangible," such as goodwill, patent rights, royalties, and assets and receivables due from affiliates or shareholders. These types of "assets" are not certain enough and therefore, for purposes of demonstrating financial capability, should not be included as an asset under the "tangible net worth" for a company.

Subsection (B) provides details on what needs to be submitted depending on the type of entity (whether or not a governmental entity). In subsection (B)(3), this rulemaking adds a requirement that any entity that is not "a state or federal agency, county, city, town, or other local governmental entity" must provide financial assurance for closure using one or more of the mechanisms listed under subsection (C). This requirement applies to any private company, corporation, L.L.C., etc. This rulemaking moves the current language at subsection (D)(1)(h) to subsection (B)(3), which allows the entity to use one or more financial mechanisms listed under subsection (C) for the financial demonstration. Subsection (B)(4) requires an operator of a sewage treatment facility or a utility subject to A.R.S. Title 40 to submit a description of the financial arrangements, such as rate structure, to cover the costs of operating and maintaining the facility. The Department has incorporated this requirement because of several situations since 2001 that showed that it is important to verify that the owner or operator of a sewage treatment plant or a utility is financially capable of operating and maintaining the facility in compliance with the permit requirements.

This rulemaking lists various options for financial mechanisms in subsection (C). Subsections (C)(1)(b) and (c) deal with self-assurance demonstrations that are addressed at subsections (B), (C) and (D)(1) in the current rule. The current rule takes the approach that all entities will first try to demonstrate capability by self-assurance. If an entity is not qualified (the disqualification criteria are currently in subsection (C)), then the entity must use a mechanism currently

in subsection (D) to demonstrate financial capability. This rulemaking lists the self-assurance mechanism as one of many mechanisms in a new subsection (C) by moving the “self assurance mechanism” requirements to subsection (C)(1) and adding specific requirements to clarify exactly what an applicant needs to provide for the financial demonstration while allowing flexibility in the type of documents that may be submitted. The conditions in the amended rules are more generic, allowing each entity to submit documentation to show financial strength that is appropriate to its status. The self-assurance mechanism in subsection (C)(1) is based on 40 CFR 264.143(f). If the applicant is a publicly traded corporation, it may be appropriate to submit a 10K form or 20F Form for the financial report under subsection (C)(1)(a)(ii).

This rulemaking replaces the “publicly traded corporation” and “privately traded corporation” labels from the current subsections (C)(1) and (2) with more generic language in subsections (C)(1)(b) and (c). In addition to meeting the financial strength criteria, this rulemaking adds language in subsection (C)(1)(a) to require a chief financial officer (CFO) of a company to certify the analysis and a statement from a certified public accountant (CPA) that the analysis is accurate based on review of financial statements for the latest fiscal year or more recent financial data. The independent COA must verify that the information in the CFO letter and the examination report is accurate and no adjustment is necessary. The statement by an independent CPA will allow the Department to expedite its review of the financial information submitted for the financial demonstration by “self-assurance.”

This rulemaking moves the individual financial mechanisms currently in subsections (D)(1)(a) through (D)(1)(g) and (D)(1)(i) to subsections (C)(2) through (C)(8). The Department added specific provisions for each mechanism. This rulemaking adds language to state that these mechanisms may cover all or part of the needed amount for the financial demonstration.

For situations when a third-party is the guarantor under subsection (C)(8), this rulemaking adds language in subsection (C)(8)(b) to require the guarantor to notify the Department if the guarantor is subject to an increase in financial responsibility, receives an adverse auditor’s notice, or is required to report to the Department on its financial condition, if the Department requests an update.

This rulemaking merges the current language in subsections (E) and (F) into subsection (D) to address loss of coverage. If the Department suspects that there is loss of coverage, the Department will notify the permittee and require a response within 30 days. Alternatively, the Department may specify a permit condition to require the permittee to report on the permittee’s financial capability at a specific frequency.

This rulemaking moves the language in subsection (D)(2) to the new subsection (E).

This rulemaking adds language in the new subsection (F) to address when a permit amendment is required for a change in financial demonstration, including a change in the mechanism. A substitution of a financial mechanism is handled as an “other” amendment under R18-9-A211(D)(2)(c). In addition, because the permittee has an obligation to maintain financial capability and verify that it is maintained, this rulemaking requires the permittee to submit a complete financial capability demonstration for all facilities to be covered by the amended permit when the permittee submits an application for a significant amendment under R18-9-A211(B). The permittee will need to demonstrate financial capability for the currently permitted facilities in addition to those covered in the application for permit amendment.

In subsection (G), this rulemaking replaces the words “duplicative of” with “covered within.” If the financial demonstration for the APP facilities is covered within a demonstration that was provided to another governmental agency and the Department has access to that information, then an additional demonstration is not necessary. The demonstration must deal with all the closure requirements as mentioned in R18-9-A201(B)(5) and the operation and maintenance costs noted in subsection (B)(4), as applicable. Additionally the financial demonstration must reflect the current financial condition or it is not valid for the purposes of the Section.

This rulemaking adds a new subsection (H) to state the Department’s ability to require recordkeeping and reporting.

The Department reminds the reader that, consistent with A.R.S. § 49-243(N), the Department maintains all financial demonstration information as confidential.

R18-9-A204. Contingency Plan

In addition to several editorial changes to this Section, this rulemaking revises subsections (A)(2) and (C)(3) and adds a new subsection (B)(4).

Because of the addition of the definition of “AQL” to R18-9-101, this rulemaking also adds language to subsection (A)(2) to describe a violation of an AQL in the list of triggers for contingency plan actions in response to a discharge. This means that the applicant must prepare a contingency plan that addresses what the permittee will do if the discharge results in any of the conditions listed in subsection (A), including a violation of an AQL. Currently, R18-9-A202(A)(7) requires the applicant to submit a contingency plan with the application.

This rulemaking requires that a permittee include within its contingency plan the action of evaluating BADCT effectiveness if the discharge results in any of the conditions listed in subsection (A). The permittee must be prepared to upgrade the facilities, if necessary, to return the facility to compliance.

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This rulemaking adds language to subsection (C)(3) to clarify that the Department's approval of a proposed corrective action is based on whether the proposed corrective action will return the facility to compliance within an expedient time-frame in case some of the corrective action tasks take place in the future.

R18-9-A205. Alert Levels, Discharge Limitations, and AQLs

This rulemaking revises the Section title to include a reference to AQLs.

The rulemaking shifts subsection (A)(1) from requiring the Department to establish alert levels in individual permits to describing how the Department will prescribe alert levels when it determines that an alert level is necessary. This rulemaking makes a similar change to subsection (B) for discharge limitations. This rulemaking adds a new subsection (C) to address AQLs. As described by this rulemaking, these provisions emphasize the authority in A.R.S. §§ 49-243(B)(2) and (3).

R18-9-A206. Monitoring Requirements

This rulemaking makes conforming and editorial changes to this Section. In addition, in response to comments from stakeholders, this rulemaking adds a clause in subsection (B)(3) to allow a shorter time period for retaining monitoring records, if the Department specifies the shorter period in the permit.

R18-9-A207. Reporting Requirements

This rulemaking makes editorial changes to this Section and revises subsection (C) to state that the environmental protection statutes or rules may be either federal or state.

R18-9-A208. Compliance Schedule

This rulemaking makes clarifying changes to this Section. In addition, in subsection (A)(3), this rulemaking states the 30-day reporting requirement in this provision is a default requirement and that a different time period may be specified in the permit.

R18-9-A209. Temporary Cessation, Closure, and Post-closure

In addition to editorial changes, this rulemaking makes several changes throughout the Section.

In subsection (A)(3), this rulemaking requires the permittee to submit proposed measures for temporary cessation for Department approval prior to implementation. The current rule implies that the permittee must wait for Department approval before implementing.

This rulemaking modifies the remaining subsections to clearly state the process for review of closure plans, closure, and post-closure requirements.

This rulemaking includes several changes to subsection (B). The first change is to incorporate a "pre-closure plan" review process so that the Department works with the person to ensure that the necessary information on closure is provided with the closure plan. Step one (subsection (B)(1)) requires that a person submit a plan for investigating the site – "site investigation plan." This step allows the Department to ensure that the plan is adequate and will evaluate all necessary areas of the site. This rulemaking requires the person to prepare a plan to evaluate the extent of contamination (soils and groundwater) resulting from past discharges and the materials that will be removed or remain on site. The site investigation activity requirement in this rulemaking is necessary to evaluate information about the entire site to ensure that closure will reduce or eliminate a discharge and prevent further impact on groundwater in accordance with the definition of clean closure in A.R.S. § 49-201(5). The site investigation plan will be customized to fit the site. For simple sites (e.g. those with only one point of discharge), the Department envisions a simple site investigation plan. In some cases, there may be no need to obtain additional soil or groundwater monitoring data. In other cases, the plan will describe sampling at several areas of the site. This language is necessary and appropriate based on the Department's current experience reviewing closure plans. The Department finds that often those plans are misdirected and fail to demonstrate whether the site can achieve clean closure even though significant resources have been expended in those areas. Working with the person early on in the process will ensure that efforts are efficient. This rulemaking requires that a plan be submitted to the Department for review and approval. The Department will approve the site investigation plan if it meets the criteria specified in the new subsections (B)(1)(b) and (c). In addition, this rulemaking adds language in new subsection (B)(1)(d) to state that once the site investigation plan is approved, the person may submit the notification under A.R.S. § 49-252(A) and begin the formal closure process.

Once the site investigation is complete, the person needs to prepare the closure plan. This rulemaking adds details about the components of the plan in subsection (B)(2). The "closure plan" includes a summary of the results of the site investigation, a closure design, an estimate of closure costs, and a schedule for implementing the plan if clean closure will not be achieved. This rulemaking adds a new subsection (B)(2)(a)(i) to require the permittee to provide information on the extent of contamination from the discharge, if any. This rulemaking moves the language currently in subsections (B)(1)(a)(iv) and (vii) to subsection (b) to define the "closure design." In addition, this rulemaking moves the language currently in subsections (B)(2)(a)(viii) and (ix) to (B)(2)(c) and (d), respectively.

This rulemaking deletes subsection (B)(1)(b) of the current rule because typically the time between receipt of a "complete closure plan" and the Department's final decision is very short. The public notice is issued upon receipt of the complete closure plan. The language under R18-9-108 is adequate.

This rulemaking moves the language in the current R18-9-A209(B)(2) to a new subsection (B)(3) and adds language to describe the decision-making process for facilities not covered by an APP. When the facility is not covered under an APP, after all closure activities have been fully implemented and clean closure has been achieved, the Department will issue a letter of approval. This rulemaking adds language to describe the issuance of a Permit Release Notice under a new subsection (C)(2)(c), if the facility is covered by an individual permit.

This rulemaking deletes subsection (B)(3) because facilities that need to close under a permit are addressed by the language in the new subsections (B)(3)(b) and (C).

In addition to editorial changes, this rulemaking revises post-closure requirements in subsection (C) by clarifying that the permittee submits post-closure information through an application for an individual permit or an amendment to an individual permit. The permittee must submit the applicable fee (proposed subsection (C)(1)(g)) with the amendment. If the facility does not qualify for clean closure, post-closure activities must be included in an APP as envisioned in A.R.S. § 49-252(E). This is a separate activity from the closure plan review. The Department will need to either amend an existing permit or to issue an APP to cover post-closure requirements. As a separate action from the closure review, the post-closure amendment will be subject to a separate fee.

This rulemaking moves the current language in subsection (D) to new subsections (C)(2)(a) through (c). These provisions describe permit conditions that address when the closure plan and post-closure plans have been fully implemented. Subsection (C)(2)(b) specifies that the Department may inspect the facility to verify that the closure and post-closure plans have been implemented. Subsection (C)(2)(c) specifies that the Department will issue a document called a “Permit Release Notice” to verify that the permittee has met all closure and post-closure requirements for the facility. This step makes it clear to all parties that the permit has been satisfied and the file may be closed.

R18-9-A210. Temporary Individual Permit

In addition to updating the citations, this rulemaking adds two provisions in subsection (D) regarding public participation for temporary individual permits.

For subsection (D)(4), this rulemaking adds a provision to state that the Department will not initiate another public participation process for the renewal of a temporary permit. It is not necessary to conduct additional public participation on a renewal of a temporary permit if there will be no change. Subsection (E) allows for the temporary permit to be renewed only once, for a maximum of one year. Because the length of the permit is in rule, the public has already received notice that the permit may be extended for up to one year after expiration and therefore additional notice is not required.

This rulemaking adds language to subsection (D)(5) to require public participation (public notice) for significant amendments of temporary individual permits.

This rulemaking revises the new subsection (E) by replacing “[a] permittee” with “[t]he Director” because it is the Director who has the authority to renew a temporary permit.

R18-9-A211. Permit Amendments

This rulemaking adds a new subsection (A)(3) to state that when a permit is amended and the amendment is effective, the amended permit supersedes the previous permit.

This rulemaking revises subsection (B)(4) to state that an amendment to include any less stringent monitoring requirement will be treated as a significant amendment.

In subsection (B)(6), this rulemaking adds language that if the Department determines for a permitted facility that is not built within five years of permit issuance that the BADCT needs to be updated, then the Department must follow the requirements for a significant amendment. Technology may advance over a five-year period. This is an appropriate length of time to determine, if the facility has not been built yet, whether an amendment must be made to the permit. If that decision is made, then the amendment will be handled as a significant amendment.

This rulemaking adds “including a change in disposal method” to subsection (B)(9) to emphasize that a change in disposal method is significant enough to warrant the public notice process required for a significant amendment.

This rulemaking adds another situation to the list of minor amendments in subsection (C)(6) to address a change in recordkeeping retention requirements.

This rulemaking changes or adds scenarios for the list of “other amendments” in subsection (D) because the Department views these types of amendments as being more substantial than a minor amendment but does not think they warrant the public participation requirements for a significant amendment. Specifically, the changes include:

- Allowing a change in “treatment method” if that method “provides equal or better performance” (subsection (D)(2)(a));
- Adding alert levels, AQLs, or other permit limits into a permit based on monitoring subsequent to permit issuance (subsection (D)(2)(h));
- Adding a point of compliance monitor well (subsection (D)(2)(i));
- Incorporating monitoring requirements to ensure that Reclaimed Water Quality Standards are met (subsection (D)(2)(k)); and

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- Allowing a change in a contingency plan resulting in equal or more efficient responsiveness (subsection (D)(2)(l)).

This rulemaking adds new language at subsection (F) to make it clear that a lesser level of treatment technology to meet BADCT will not be approved after the permit has been issued except in specific instances. It is not appropriate to allow less protective technology if the operation was previously approved using a more protective technology. This approach is appropriate because one of the purposes of BADCT is to encourage better treatment of wastewaters. Therefore, once a permit has been issued that incorporates a particular type of technology, then that level of treatment must be met unless one of the criteria listed in subsection (F) is met. The specific situations where a less stringent control technology may be used are:

- The industrial classification of the facility has changed,
- The pollutant load has decreased or the pollutant composition has changed significantly,
- The Director approves a corrective or contingency action that necessitates a change in the treatment technology, or
- The approved discharge control technology is not operating properly due to circumstances beyond the control of the owner or operator.

These may be appropriate reasons to reevaluate BADCT.

R18-9-A212. Permit Transfer

In addition to editorial changes throughout the Section, this rulemaking adds new language to subsection (A)(5) to highlight that the transferor is required to pay annual registration fees under A.R.S. § 49-242. The requirement to pay annual registration fees is currently part of the standard permit conditions. The Department finds that some buyers do not realize that this requirement exists and believes that including it in this provision is beneficial.

R18-9-A213. Permit Suspension, Revocation, Denial, or Termination

This rulemaking revises the Section heading to reflect all the topics covered in this Section. This rulemaking adds two conditions for which the Director may suspend or revoke an individual permit. Subsection (A)(5) addresses when a permittee has failed to construct a facility within five years of permit issuance. The Department originally planned to propose that the Director may suspend or revoke if the facility was not built within three years of permit issuance. This type of provision is important if BADCT has changed and the facility is not built. Some permits have been issued for facilities that have not been built. This is a problem if the permittee only applies for the permits to avoid advances in BADCT. The Department stresses that the language in this Section is permissive, e.g., the Department ‘MAY suspend or revoke...’ (emphasis added). If the facility has not been built within five years, BADCT may need to be updated. If the Department determines that BADCT needs to be upgraded and the applicant has not applied for a permit amendment, the Department may suspend or revoke the permit.

Subsection (A)(6) addresses when a permittee failed to maintain the financial capability required under R18-9-A203(B).

Subsection (C) describes the situations when the Department will terminate a permit. The individual permit is no longer necessary if the facility closes and the Department issues a Permit Release Notice under R18-9-A209(C)(2)(c) or if the facility is covered under a different permit. If the permit covers more than one facility, the permit will only be terminated when all the facilities are either closed or covered under a different permit.

R18-9-A214. Requested Coverage Under a General Permit

This new Section has been added to include language describing the process for an applicant to request coverage under a general permit for one or more facilities covered under an individual permit. The rule specifies the circumstances when the individual permit coverage will no longer apply to the discharge.

ARTICLE 2. AQUIFER PROTECTION PERMITS -- INDIVIDUAL PERMITS

PART B. BADCT FOR SEWAGE TREATMENT FACILITIES

R18-9-B201. General Considerations and Prohibitions

This rulemaking makes conforming and editorial changes throughout the Section.

In subsection (A), this rulemaking strikes “including BADCT requirements” because the BADCT requirements for sewage treatment facilities are included by the language of “this Article.”

As part of BADCT for a sewage treatment facility, this rulemaking adds a provision at subsection (C) that requires a permittee to ensure that the sewage treatment facility is operated by a certified operator (A.A.C. R18-5-105).

This rulemaking revises subsection (D) to include requirements for operation and maintenance of a sewage treatment facility, in particular that the permittee has an Operations and Maintenance (O&M) manual and uses it. The Department does not expect the permittee to submit the O&M manual to the Department, but requires the permittee to make it available to the Department upon request. The Department interprets “available” to include electronic format or located on a web site.

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This rulemaking revises subsection (E) to prohibit a person from creating or maintaining a connection between a sewage treatment facility and a potable water supply where sewage or wastewater contaminates a potable or public water supply. This change covers any scenario that may cause a connection including when a connection is not purposefully installed.

In subsection (F), this rulemaking removes “untreated” and adds “or partially treated sewage that has not completed the treatment process.” Permit requirements are derived based on the treatment processes and operations described in the permit application for the sewage treatment facility. The permittee must not bypass wastewater that has not been treated with all the necessary treatment components that equate to BADCT. This rulemaking revises the language to prohibit the bypass of sewage and also partially treated sewage that has not completed the treatment process. This rulemaking deletes “untreated” because the definition of sewage begins “untreated wastes from toilets, baths, sinks, lavatories, laundries...” If the Department substituted “untreated wastes” for “sewage” in subsection (F), the expression will become redundant: “A person may not bypass *untreated untreated* wastes. . .”

During the informal stakeholder process, some stakeholders expressed concern that the inclusion of the phrase “partially treated” suggests that an operator will not be able to divert treated wastewater from an individual treatment method in a plant (such as filtration), even if that treatment method is not needed for complying with permit discharge limitations. One commenter stated that the treatment plants have filtration as a final step in treatment to ensure that the wastewater meets turbidity limitations. However, it is often the case that the wastewater already meets turbidity requirements and does not need filtration. The commenter suggested that the operator should be free to bypass any treatment method as long as permit limits are met and suggested adding, to the end of this Section, the following: “This shall not preclude an operator from bypassing a treatment method within the plant if the method is not needed to meet discharge limitations.” This language is unnecessary, because the test of whether wastewater is fully treated is based on whether it meets the discharge limitations and other requirements (e.g., discharge location) of the permit. If the plant is being operated properly so that permit limits are met, regardless of whether specific unit processes were used, such as a chemical feed process or auxiliary disinfection process, the Department considers the wastewater to be “treated.” For this reason, the language suggested by the commenter is unnecessary.

In subsection (I)(1), based on the authority in A.R.S. § 49-104(A)(10), this rulemaking describes what “full noise, odor, and aesthetic controls” means by adding specific criteria for noise and limiting the controls on “odor-producing components.” R18-9-B201(I)(1) currently requires: “Full noise, odor, and aesthetic controls means that all treatment components are fully enclosed...” This rulemaking specifies a 50 decibel level or a level specified in a local noise ordinance. In addition, this rulemaking restricts the “fully enclosed” requirement to only the treatment components that are “odor-producing.” This approach is less restrictive than the current rule language. Because it is not feasible to comprehensively list all odor-producing components, this rulemaking includes a generic reference to “odor-producing components.” Also, the term “scrubbers” is inclusive of a variety of odor-control devices, such as carbon filters and biological odor control.

This rulemaking adds subsection (I)(2)(a) to address a decreased setback for a facility undergoing a major modification if that decreased setback is allowed by local ordinance. If the potential for shorter setbacks is not addressed by the option specified in subsection (I)(2)(a) or (b), then the entity must meet the setbacks specified in subsection (I). The Department uses the term, “major modification” as defined in statute at A.R.S. § 49-201(20). New facilities must meet the setback specified in the table within subsection (I).

This rulemaking adds the language in subsection (J) to address odor pollution. This provision is necessary, for example, if the setbacks specified in subsection (I) do not provide adequate distance for odors from the sewage treatment facility to dissipate. The authority to control odors is provided in A.R.S. § 49-104(B)(10). The permittee must take steps to control the persistent emission of offensive odors from the plant. The Department is worried about long-standing, persistent, offensive odor problems that can be controlled within the operations, not sporadic occurrences.

R18-9-B202. Design Report

This rulemaking changes the title of the Section, because the Section only deals with the design report. The application requirements are found in R18-9-A201(B). This rulemaking adds to subsection (A)(3) citations to R18-9-B205 and R18-9-B206. These Sections also specify treatment performance requirements. This rulemaking deletes subsection (A)(9) as amended and moves the language to R18-9-B203 because that Section addresses plans and specifications.

In a new subsection (A)(9), this rulemaking requires the applicant to supply in the design report several types of flow data for the sewage treatment facility. These flows were adapted from the textbook by Metcalfe & Eddy, “Wastewater Engineering Treatment and Reuse,” a frequently used guide for designing sewage treatment facilities. This rulemaking adds data submittal requirements for:

- “Average daily flow.” This is the benchmark number for design flow. Engineers use this number for development of flow rate ratios and for estimating pumping and chemical costs. The Department plans to use this number as the basis for classifying a facility according to daily flow, which dictates the type of permit required for the facility, e.g., 3000 gallons per day (gpd), 24,000 gpd, etc.
- “Maximum day.” This is used for sizing of equalization basins, chlorine contact tanks, sludge pumping systems, etc.

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- “Maximum month.” This is the average daily flow during the month of highest flow. This is used for sizing of chemical storage facilities and other uses.
- “Peak hour.” This is used for sizing of pumping facilities and conduits and many unit treatment processes and is an important number for developing process control strategies for managing high flows.
- “Minimum day.” This is used for sizing of influent channels to control solids deposition and for sizing effluent recycle requirements for trickling filters.
- “Minimum month.” This is the average daily flow during the month of lowest flow. This is used for selection of the minimum number of operating units during low flow periods and scheduling shutdown for maintenance.
- “Minimum Hour.” This is used for sizing turndown of pumping facilities and determining low range of plant flowmeter.

These conditions only apply to sewage treatment facilities and are addressed in this Section rather than R18-9-101.

This rulemaking revises subsection (A)(10) because the requirement for the Professional Engineer is addressed in the introductory language in subsection (A). This rulemaking edits the remaining requirements of the subsection to require the applicant to submit specifications for pipe, standby power source, and water and sewer line separation in the design report.

This rulemaking deletes subsection (B) because the information was included in a new subsection at R18-9-A201(C)(2) as an application requirement. This rulemaking adds a new subsection (B) to emphasize that the Department may inspect a facility at any time without notice.

R18-9-B203. Engineering Plans and Specifications

In addition to conforming and editorial changes throughout the Section, this rulemaking changes the title of the Section, because the Section only deals with the engineering plans and specifications.

This rulemaking moves the language in R18-9-B202(A)(9) to a new subsection (A). This provision deals with sewage treatment facilities with design flow less than one million gallons per day.

This rulemaking adds subsection (B)(8) that allows the Department to request that the permittee submit the plans and specifications for facilities that were constructed before Department approval, if the construction does not conform to the design report.

This rulemaking adds a new subsection (E) that requires the permittee to submit an Engineer’s Certificate of Completion after the facility is constructed but before discharge.

R18-9-B204. Treatment Performance Requirements for a New Facility

In a new subsection (A), this rulemaking adds a definition of “calendar week” that conforms to the use in the AZP-DES rules, “Sunday through Saturday.”

This rulemaking revises subsection (B)(4) to add criteria for measuring the reduction of pathogens by measuring *E. coli* instead of fecal coliform. The applicant has the choice of measuring for either *E. coli* or fecal coliform. This rulemaking adds subsection (B)(4)(a)(i) to base sample collection on four samples within the week. This rulemaking allows the permittee to justify the use of alternative indicator parameter monitoring with a different frequency. This may be most useful for rural treatment plants where it may be difficult to submit timely samples at least four days per week to the nearest licensed laboratory.

This rulemaking deletes language in (D) because it limits the Department authority in A.R.S. § 49-243(B)(1). In addition, this rulemaking adds a new subsection (E) to state that when alternatives are justified, the Department may issue an individual permit that places greater reliance on monitoring to ensure operational capability. The Department will include specialized monitoring requirements that may include an increase in the monitoring requirement that is more frequent than typically applied in permits for other similar facilities.

R18-9-B205. Treatment Performance Requirements for an Existing Facility

In subsection (2), this rulemaking increases the factor used as the ceiling cost of alternatives that are considered for BADCT from \$0.05/gallon of design flow to \$1.00/gallon of design flow. This provision will impact only a small number of sewage treatment facilities – those that existed and were constructed before 1986 and have not undergone a major expansion since 1986. Although most APPs do not expire, this provision will require an existing facility that is not preparing to expand to evaluate whether the facility can move closer to achieving BADCT as described in R18-9-B204. The facility will need to evaluate possible treatment improvements up to the ceiling cost provided in the rule. Any sewage treatment facility covered by an APP that has met pre-January 2001 BADCT requirements most likely will not be reevaluated until the facility needs to expand. The increase in the ceiling cost factor (from \$0.05 to \$1.00) will allow more options to be considered. The statute requires the Department to look at cost versus discharge reduction achieved by a particular technology. The \$1.00 per gallon of design flow is a reasonable ceiling cost limit for evaluating measures that will improve treatment performance. This compares to the overall cost to construct a new sewage treatment facility, which runs between \$4 and \$13 per gallon of design flow. The \$1.00 per gallon of design flow figure is less than 25 percent of the cost for constructing a new facility in nearly all cases and more likely ranges from 10 to 15 percent.

R18-9-B206. Treatment Performance Requirements for Expansion of a Facility

This rulemaking removes the word “permitted” from the title and “with a current individual permit” from the introductory sentence because all existing sewage treatment facilities that operated under a Notice of Discharge (NOD) or a Groundwater Quality Protection Permit (GWQPP) have been already permitted.

This rulemaking makes editorial changes to subsections (1) and (2). The existing language at subsection (1)(a) is implied as part of permit requirements and is no longer necessary. The existing language at subsection (1)(c) is now within the new subsection (1)(a). Some significant amendments to a permit will not affect the treatment performance of the facility, so this rulemaking adds language to subsection (1)(b) to describe that the new facility BADCT requirements in R18-9-B204 apply if the requirements “can practicably be achieved by the addition.”

ARTICLE 3. AQUIFER PROTECTION PERMITS – GENERAL PERMITS

PART A. GENERAL PROVISIONS

R18-9-A301. Discharging Under a General Permit

This rulemaking makes several editorial changes to this Section and throughout Article 3. These changes include:

- Replacing “Provisional Verification of General Permit Conformance” with “Construction Authorization,”
- Replacing “Verification of General Permit Conformance” with “Discharge Authorization,” and
- Emphasizing that the Department authorizes the discharge under a general permit instead of “issuing a general permit” for the discharge.

This rulemaking adds language to the new subsection (A)(4)(d) to clarify that a person may not discharge until a Discharge Authorization is issued. In addition, this rulemaking adds language to the new subsection (A)(4)(e) to clarify that a person may have to pay fees for Type 4 General Permits that are assessed by delegated agencies through the authority in A.R.S. §§ 49-107 and 49-112.

In subsection (B), this rulemaking deletes the requirement for an individual to supply his or her social security number on the Notice of Intent to Discharge (NOI) form.

In subsection (D)(1), this rulemaking adds language to emphasize that a person shall not begin construction of a facility to be authorized by a Type 4 General Permit until the Director issues a Construction Authorization. Similar language in subsection (D)(1)(e)(i) has been deleted. Also, this rulemaking adds language to subsection (D)(1)(c) to list the information that must be included within a Construction Authorization. This information is critical for describing the approved on-site wastewater treatment facility.

This rulemaking includes a reference to R18-9-E301, the Type 4 general permit for sewage collection systems, to subsections (D)(1)(e)(iii), (D)(1)(f)(i), (D)(2)(a)(i), and (D)(2)(c)(i). The 4.01 General Permit contains different requirements than for on-site wastewater treatment facilities and therefore the reference to R18-9-E301 is necessary in these subsections.

R18-9-A303. Permit Renewal

This rulemaking includes editorial changes throughout this Section including the title. This rulemaking adds language in subsection (A) to emphasize that, in addition to transferring the general permit authorization, if the authorization is revoked or expires, a person may not discharge under the general permit. Also, this rulemaking revises the subsection to emphasize that the authorization is for the authorization period and not the operational life of the facility. Renewals are not required for Type 1 or Type 4 General Permits.

For subsections (B)(1)(d) through (f), this rulemaking adds a five-year permit authorization renewal period for the 2.04 General Permit and two new Type 2 General Permits (2.05 and 2.06).

R18-9-A304. Notice of Transfer

This rulemaking adds language to describe the transfer requirements that apply for the various types of the general permits. This rulemaking adds a new subsection (A) to address the requirements for Type 1 General Permits. This rulemaking does not require a notice of transfer for any facility covered by a Type 1.01 through 1.08 or 1.10 through 1.12 General Permit. In subsection (A)(2), this rulemaking adds a statement that transfer requirements for an on-site wastewater treatment facility covered by the Type 1.09 General Permit are addressed in R18-9-A316. In subsection (A)(3), this rulemaking requires a permittee who transfers ownership of a sewage treatment facility covered by the Type 1.09 General Permit to notify the Department of the transfer by certified mail within 15 days of the transfer.

This rulemaking addresses the transfer requirements for Types 2, 3, and 4.01 General Permits in subsection (B). This Section also directs the permittee for a Type 4.01 General Permit for a sewage collection system to submit a Notice of Transfer form to the Department or the appropriate delegated health or environmental agency.

This rulemaking addresses the transfer requirements for all other Type 4 General Permits (other than 4.01 General Permit) in subsection (C). The transfer requirements for facilities covered by one or more Type 4.02 through 4.23 General Permit are included in R18-9-A316.

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R18-9-A305. Facility Expansion

This rulemaking makes editorial changes to this Section.

R18-9-A306. Closure

This rulemaking revises this Section to emphasize that closure options fall into four categories:

- Closure notification is not required and clean closure is assumed (subsection (A)(1)) when the specified conditions are met,
- Closure notification is required along with a closure plan as required under A.R.S. § 49-252 (subsection (A)(2)),
- Closure requirements are specified in the general permit, or
- Closure requirements are specified in R18-9-A309(D).

Most of the language in this Section comes from subsections (A) through (C) of the current rule. Additionally, this rulemaking clearly states the closure requirements that apply for facilities covered by Type 1 General Permits. If a discharge from a sewage treatment facility covered under the Type 1.09 General Permit ceases, the permittee shall follow the closure requirements in subsection (A)(1) (no notification, follow general closure requirements).

R18-9-A307. Revocation of Coverage Under a General Permit

Because the Department revokes coverage under a general permit instead of actually revoking the general permit, which is established in rule, this rulemaking revises the title of and makes conforming changes throughout the Section.

This rulemaking adds language in subsection (B)(2) to address situations when a discharge is authorized under one general permit and due to some set of circumstances the permittee applies for coverage and obtains authorization to discharge under another general permit for the same facility. This rulemaking adds a reference to R18-9-107 that addresses consolidation of permits to this subsection.

This rulemaking adds a new subsection (E) to require the Department to notify the permittee if the Director revokes coverage under a general permit. This language will apply if the Department has not yet issued an individual permit for the facility discharge. The notification contains several pieces of information including the reason for the revocation and the appeal rights of the permittee.

For the situations when the Department has already issued an individual permit for a discharge to replace coverage under a general permit, this rulemaking adds a new subsection (C) to explicitly state that the Department will not have to follow the notification process for revocation of coverage under a general permit specified in subsection (E). This is appropriate because the permit coverage is being replaced by an individual permit and all the participation and appeals notices are included in the process to issue an individual permit.

R18-9-A309. General Provisions for On-site Wastewater Treatment Facilities

This rulemaking makes editorial changes to this Section including the title.

This rulemaking revises subsection (A)(3) to be consistent with the change to R18-9-B201(F). This revised language is appropriate for on-site wastewater treatment facilities.

During the informal review period, the Department received comments on the language regarding when the owner or operator of an on-site wastewater treatment facility will have to hook-up to a sewage collection system. In response, this rulemaking strikes the current language in subsection (A)(5) (hook-up required if the distance to connect is less than 400 feet and the cost to hook up is not more than \$6000) and adds two new subsections. This rulemaking adds language to subsection (A)(5)(a) to address connections to a sewer in response to a requirement of a local ordinance, a Nitrogen Management Area, or a community master plan or regional 208 planning document. The Department realizes that in some cases, however, a sewer might be available but none of the conditions in subsection (A)(5)(a) apply. For the situation when none of the conditions listed in subsection (A)(5)(a) apply, this rulemaking requires hook-up only if a sewer line is available and the service connection fee and construction costs of the building sewer are within the dollar figures specified. This situation usually occurs in areas where housing densities are already high enough to justify the cost of providing a sewer. In these areas, the threat of groundwater contamination is also greater, further justifying the hookup requirement. There will be few, if any, cases where a sewer line will be extended in rural areas of low density. In these cases, it is likely that a connection ordinance or approved master plan already exists for the area, mooted the need to apply the last connection provision.

This rulemaking defines a “reasonable service connection fee” as \$6000 for a dwelling or \$10 times the daily design flow in gallons for sources other than a dwelling (subsection (A)(5)(b)(i)). The fee is modeled after the hook-up fee that appeared in Engineering Bulletin 12 guidance document, which was superseded by the 2001 APP rulemaking, which recommended sewer connection if the connection fee was less than two times the cost of construction of the on-site wastewater treatment facility. In addition, this rulemaking defines reasonable “construction” costs of the building sewer as \$3000 for a dwelling and \$5 times the daily design flow in gallons for sources other than a dwelling. The Uniform Plumbing Code defines “building sewer” as “that part of the horizontal piping of a drainage system that extends from the end of the building drain and that receives the discharge of the building drain and conveys it to a public sewer, private sewer, individual sewage disposal system, or other point of disposal.”

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This rulemaking moves the language in subsection (A)(7) to a new subsection (A)(7)(f) and modifies the text to address any water quality standard (surface and aquifer).

To control the discharge of nitrogen, this rulemaking adds a new subsection (A)(8) to address how nitrogen contributions will be managed and calculated from various on-site wastewater treatment facilities. For on-site wastewater treatment facilities with flow of less than 3000 gallons per day, special nitrogen management provisions apply if the facility is located within a Nitrogen Management Area (subsection (A)(8)(a)). For on-site wastewater treatment facilities with flow between 3000 and 24,000 gallons per day, subsection (A)(8)(b) specifies that nitrogen is managed according to R18-9-E323. Subsection (A)(8)(c) specifies nitrogen-loading limitations for new subdivisions relying on on-site wastewater treatment facilities for wastewater treatment and disposal.

This rulemaking adds a new subsection (A)(9) to describe the types of repairs that are substantial enough to warrant submittal of a new NOI and ancillary requirements (subsection (A)(9)(b)). The list includes “non-routine” repairs. This rulemaking does not require a new NOI for routine repairs as stated in subsection (A)(9)(a), but does recognize in subsection (A)(9)(d) that some counties have repair permits for routine repairs but that a county’s requirements (local ordinances) are separate and independent of the requirements specified in this rule.

This rulemaking adds a new subsection (A)(10) to deal with cumulative loading to the groundwater from multiple on-site wastewater treatment facilities on a property or a site either under common ownership or subject to a larger plan of sale or development. The rule states that the cumulative loads must be addressed as if coming from one source. This provision will typically apply to situations such as RV parks, campgrounds, and other commercial wastewater sources. The intent is to ensure water quality protection for situations where either because of the pattern of historical development of the property or advertent piecemealing to avoid the permitting flow thresholds, the cumulative flow at the property has become so high that the additional protective measures of the larger-flow permits are needed.

This rulemaking revises the NOI requirements in subsection (B). Many of the changes are editorial in nature and others are made to conform with changes to other parts of the rule, such as the changes in subsection (B)(1). This rulemaking revises subsection (B)(2)(b)(ii) to require the applicant to show, in the site plan, any feature within 200 feet of the boundary of the primary and reserve areas for the disposal works and not the property boundary. This rulemaking deletes subsection (B)(2)(c) because the location of wells, regardless of ownership, must be included in the site plan based on the language in subsection (B)(2)(b)(i) or (ii).

This rulemaking makes editorial changes to subsection (B)(3) and requires certain design information for a single family dwelling and other types of discharges. The number of bedrooms is an appropriate indicator of flow if the source is a single family dwelling, but not for offices, commercial building, etc.

This rulemaking combines subsections (B)(4) and (6) and part of subsection (B)(5) into a new subsection (B)(4). This subsection pertains to information submittal requirements for the Notice of Intent to Discharge for the 4.03 through 4.23 General Permits. The introduction to subsection (B)(4) is found within the old subsections (B)(4)(f) and (B)(6). This rulemaking also specifies in R18-9-A309(B)(6)(c) for systems constructed under the 4.03 through 4.23 General Permits, a requirement that the operation and maintenance manual for the facility address tasks and schedules for operating and maintaining performance of the facility over a 20-year operational life. The applicant is required to design the facility for a 20-year operational life in R18-9-A312(B)(1). It is appropriate to require that the operation and maintenance manual address how to maintain the facility for that period of time. This rulemaking revises subsection (C)(2)(c), similarly.

This rulemaking adds a requirement in subsection (C)(1) for the applicant to certify on the Request for Discharge Authorization form that the septic tank passed a watertightness test. This requirement is necessary to ensure that the tank is still leak-proof after shipping and installation, thus, retaining its ability to ensure adequate treatment and environmental protection.

This rulemaking makes editorial or conforming changes to subsections (C)(2), (C)(2)(f), and (C)(3). This rulemaking adds a requirement to “show changes” on the as-built plans required in subsection (C)(2)(a) and the final list of equipment and materials in subsection (C)(2)(b). This rulemaking revises subsection (C)(2)(c) by replacing “plan” with “manual for the on-site wastewater treatment facility” and requiring the manual to include “tasks and schedules for operating and maintaining performance over a 20-year operational life.” These changes are necessary to ensure that the facility is operated and maintained properly for long-term environmental protection.

To address comments about the need to ensure proper operation and maintenance for facilities that include more complicated technology or disposal features, this rulemaking adds a new subsection (C)(2)(d). This subsection requires that for facilities permitted under any of the general permits in R18-9-E304, R18-9-E308 through R18-9-E315, R18-9-E316 if there is a pump, or R18-9-E318 through R18-9-E22, the permittee shall enter into a one-year service contract so that the on-site wastewater treatment facility will be operated and maintained properly. This will ensure that the permittee’s system is working properly during startup, and provides a period of familiarization with the system so that the permittee can take over O&M responsibilities after one year, or more likely, renew the service contract.

This rulemaking requires in a new subsection (C)(2)(g) the applicant to submit the name and Registrar of Contractor’s license number of the installation contractor. This information is needed to ensure that an on-site wastewater treatment facility is installed properly so that it does not create a public health or environmental problem. Addition-

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ally, this requirement conforms to Registrar of Contractor practices that specifies classifications of registered contractors to install on-site wastewater treatment facilities.

For subsection (D), this rulemaking makes mostly editorial or conforming changes with a few modifications. In the introductory language of subsection (D), this rulemaking adds “or a cesspool” so that it is clear that the closure requirements apply to cesspools. Cesspools are prohibited under subsection (A)(4), however some still exist and if a person discontinues use or is ordered to close an abandoned cesspool, the rule clearly states that closure requirements apply. This rulemaking adds a new subsection (D)(3)(a) to deal with the possibility that an abandoned septic tank may float if it is in an area where the groundwater table may rise above the bottom of the tank. This is a potential problem in only a few localities in Arizona, but in those situations, the rule requires that the person punch a hole in the bottom of the tank. This rulemaking also revises subsection (D)(3)(c) to clarify that “positive drainage” means “drainage away from the closed area.” In addition, this rulemaking revises subsection (D)(5) to require the permittee to notify the Department of closures instead of the applicable county health or environmental department. This change is necessary because the delegation agreements vary too much in the type of general permits that the Department delegates to a particular county. The Department has not delegated authority for all facilities covered under the Type 1.09 General Permit to every county (e.g. facilities discharge between 3000 and 20,000 gallons per day). The Department will ensure that each county’s delegation agreement reflects authority for closures for each type of general permit delegated by the Department for review and approval authority. For example, if the Department has delegated facilities over 3000 gpd, the delegation agreement will delegate the authority for closures of those facilities.

This rulemaking makes minor changes to the language in subsections (E)(2) and (3) and deletes subsection (E)(4). This Section requires the Department to maintain a list of proprietary and other reviewed products. The Department is not listing septic tanks or effluent filters because detailed technical standards already in rule govern materials, construction, configuration, etc. Subsection (D)(2) explicitly states this. Finally, because the Department has broad authority to “contract for services” under A.R.S. § 49-203(B)(7), the specific requirement under subsection (E) is not required.

During the informal review period, the Department received several comments on the language in subsection (E). One commenter stated that the current list of proprietary and reviewed products was totally arbitrary and rather capriciously developed. The commenter requested that the Department provide the rationale behind its decision on prior approved propriety products, such as the parameters used to develop the Department’s proprietary list. The commenter stated that as of May 2004, the Department had not provided the rationale used and the commenter went on to state: “the products in the ground on or about January 5, 2001 were essentially ‘grandfathered’ and were not required to submit any supporting data, nor undergo any further review.” The Department disagrees. The listing process was developed under R18-9-A309(E) in consultation with OWAC. The Department distributed documents relating to rationale and a process for listing products during at least two OWAC meetings and discussed these issues with OWAC attendees. Under the product listing process, products that were suitable for the Engineering Bulletin #12 program were evaluated based on the treatment technologies, default performance standards specified in the rule, and complete data from independent third party tests. This evaluation process resulted in the development of the product listing that was provided to OWAC for comments.

The Department disagrees that the list of proprietary and reviewed products is arbitrary and capriciously developed. The list was developed based on the promulgated categories of general permits. The Department had extensive input from stakeholders in developing the general permit categories. The performance standards for the various general permits were based in large part on the body of information for existing products supplied by stakeholders. When the general permits were finalized, the Department concluded that those products met those standards. A stakeholder group did evaluate the Department’s draft list of products. Where the stakeholder group concurred with Department conclusions, the Department listed the products.

Another person commented during the informal review period asking “[w]hat must I do to request the necessary language changes during the rule revision process to the applicable sections that currently disallow sequencing batch reactors (i.e., Cromaglass) as a treatment alternative?” As of May 2004, the Department had listed the following four Cromaglass models, CA-12, CA-15, CA-25, and CA-30, under R18-9-A309(E) at <http://www.adeq.state.az.us/environment/water/permits/download/listpro.pdf>. The smaller Cromaglass units were not listed because they failed to meet the performance requirements under R18-9-E321(B). In this revised rule, sequencing batch reactors are considered an aerobic system under the 4.15 General Permit, and will be so designated on the Department’s list of proprietary and reviewed products when the rule becomes effective.

Stakeholders also suggested changes to subsection (E)(2) to address treatment performance of treatment technologies in series and to subsection (E)(3) that requires that the performance values reflect treatment performance for defined sewage characteristics. Instead of including the suggested language, the rulemaking adds a sentence at the end of subsection (E)(3) to require that the performance values in the list reflect the treatment performance for defined wastewater characteristics. The treatment performance will be noted for technologies in series in the Department’s list of proprietary and reviewed products.

This rulemaking adds a new subsection (F) to emphasize that there are documents (records) that must be retained for the operational life of the on-site wastewater treatment facility.

R18-9-A310. Site Investigation for Type 4 On-site Wastewater Treatment Facilities

This rulemaking makes editorial changes to subsection (A) and editorial and conforming changes to subsection (B). This rulemaking splits the current language in subsection (B)(1) between the new subsections (C) and (D) and retains subsections (B)(2) and (3) in the proposed subsection (B). In the existing rule, limiting conditions identified at a site by an investigator performing the site characterization were lumped together into one provision in subsection (B)(1), which created confusion on both the investigation and regulatory sides. In this rulemaking, limiting conditions to be identified on the surface and applicable characterization methods are described separately in subsection (C); limiting conditions to be identified in the subsurface and corresponding applicable methods are described separately in subsection (D). This conforms to how site investigations are actually performed and eliminates the problems in the existing rule. Many of the changes to the rule in this Section relate to the splitting out of the surface and subsurface characterization requirements.

As stated above, this rulemaking revises subsection (C) to address requirements for surface characterization only. Subsection (C)(1)(a) addresses the method for surface characterization. This rulemaking adds language in subsection (C)(1)(b) to address other methods for surface characterization similar to the provision currently at subsection (C)(6). This rulemaking adds language to reflect the type of information that the alternative method must provide for surface characterization. This rulemaking moves language from subsections (B)(1)(d), (e), and (g) to the new subsections (C)(2)(a) through (c). This rulemaking includes three additional limiting conditions in subsections (C)(2)(d) through (f). The additional conditions deal with whether the on-site wastewater treatment facility will be located on property within a 100-year flood hazard zone, with an outcropping of rock that will impair the function of soil receiving the discharge, or with fill material deposits.

As described in the introductory subsection, this rulemaking moves all the conditions that address subsurface characterization to a new subsection (D). The language currently in subsections (C)(2) and (3) is addressed in the new subsections (D)(1)(a)(i) and (ii). This rulemaking references the updated American Society for Testing and Materials (ASTM) standards. This rulemaking moves the language in subsections (C)(4) through (6) to new subsections (D)(1)(b) through (d). This rulemaking expands the requirement moved to subsection (D)(1)(d) to generically address water quality standards instead of "Aquifer Water Quality Standards." To ensure compliance with surface water quality standards, subsurface characterization should verify that the disposal in the area will not cause effluent to surface on the ground.

The subsurface limiting conditions listed in the new subsections (D)(2)(a) through (f) are based on current language in subsections (B)(1)(a), (b), (c), (f), and (h). This rulemaking splits the language from subsection (B)(1)(c) into new subsections (D)(2)(b) and (c). Also, this rulemaking splits the language in subsections (B)(1)(f) into new subsections (D)(2)(d) and (e) and adds specific types of subsurface conditions. This rulemaking moves the language currently in subsection (B)(1)(h) to a new subsection (D)(2)(f). The Department makes editorial changes to that subsection including replacing the citation to A.R.S. Title 49, Chapter 2, Article 2, with the citation to rule at 18 A.A.C. 11, Articles 1 and 4. Instead of referring to the minimum vertical separation requirement in R18-9-A312(E) as is in the current subsection (B)(1), new subsection (D)(2) requires the investigator to determine if a limiting condition exists within a minimum of 12 feet of the land surface or to an impervious soil or rock layer if encountered at a shallower depth.

The new language in subsection (D)(3) primarily comes from the current rule provisions at subsection (D) with a few changes. This rulemaking specifies an investigation depth of 12 feet from the surface in subsections (D)(3)(b)(ii) and (iv). This change corrects a problem with circular references between these subsections and R18-9-A312(E). In the existing rule, the depth of investigation is dependent on the minimum vertical separation specified in R18-9-A312(E). That, in turn, is dependent on the soil absorption rate, which is determined by the procedure in this Section. Therefore, in this rulemaking, an unambiguous minimum depth of investigation of 12 feet is specified. This allows at least 2 feet of subsurface materials to be investigated below the 10 foot minimum vertical separation distance to groundwater (for sandier soils) as specified in R18-9-A312(E). This also conforms to the typical depth of excavation of equipment often used to construct the test trench.

This rulemaking splits the language in subsection (D)(2)(d) into two provisions at subsections (D)(3)(b)(iv) and (v). Additionally, in response to stakeholder comment in the drafting process, this rulemaking revises the language in the new subsection (D)(3)(b)(iii) by eliminating the requirement for the size of the rock fragments currently provided in subsection (D)(2)(c) ("greater than three inches across"). This change requires the investigator to use one or more ASTM methods if the native soil consists of more than 35 percent rock fragments greater than 2 millimeters.

In addition, this rulemaking moves the language in subsection (G) to subsection (E) and reletters the remaining subsections. This rulemaking makes editorial and conforming changes to the language throughout subsections (E) and (F).

This rulemaking adds a provision at subsection (G)(3)(d) for seepage pits that specifies how to calculate the percolation test rate for seepage pits. The equation is based on previous work by stakeholders and was issued by the Department in a rule clarification in February 2001.

During the drafting process, the Department received comments questioning the effectiveness of seepage pits for use as a disposal works in treating effluent from septic tanks. The Department continues to consider that seepage pits, constructed in conformance with the requirements in the 2001 rule, are effective for this purpose. Because of stake-

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holder concerns expressed prior to the existing rule, the Department funded a study by the University of Arizona on this matter. That study, "Comparison of the Effectiveness of Trenches and Seepage Pits for Treatment of Septic Tank Effluent in Arizona," completed in June 2003, concluded: "[d]ata collected in this study indicate that the current on-site wastewater treatment regulations for seepage pit MVS [minimum vertical separation] are adequate for the protection of public health and water quality." The existing rule at R18-9-A312(E)(1) provides for a minimum vertical separation distance from the bottom of the seepage pit to the top of the water table of 25 or 60 feet depending on soil type. At R18-9-A312(E)(1), this rulemaking revises the table to include just one criterion for minimum vertical separation 60 feet to provide an even greater safety margin for those seepage pits that currently could be constructed 25 feet from the water table.

Finally, in subsection (H), this rulemaking specifies the qualifications required for a person (investigator) performing site investigations. The existing rule did not specify classifications of practitioners that can competently perform site investigations. To provide guidance on this matter, the Department issued a list of the practitioner categories in February 2001. The categories listed in subsection (H) of this rulemaking derive largely from that document.

R18-9-A311. Facility Selection for Type 4 On-site Wastewater Treatment Facilities

This rulemaking makes editorial or conforming changes to this Section, with several other changes.

This rulemaking reorganizes the subsections of this Section by switching subsections (A) and (B). This rulemaking makes only editorial changes to those two subsections.

This rulemaking revises subsection (C) to allow the applicant to justify the use of a design solely under R18-9-E302 for a wider range of limiting conditions than currently allowed.

This rulemaking revises subsection (D) slightly. The Section already requires that if the site conditions will allow the use of a "conventional" on-site wastewater treatment facility under R18-9-E302, but the applicant wants to use treatment or disposal technology in R18-9-E303 through R18-9-E322, then the applicant must include a statement with the NOI acknowledging that the applicant is applying for approval of a design that is different from R18-9-E302. The Department included this language in the current rule to ensure that designers do not promote a more expensive on-site wastewater treatment system than needed unless the applicant desires such a system. This rulemaking expands the statement to verify that:

- The applicant desires to install a treatment works or disposal works authorized under R18-9-E303 through R18-9-E322; and
- The applicant is aware that such a system may result in higher capital, operation, and maintenance costs than for a conventional septic tank and disposal works system.

R18-9-A312. Facility Design for Type 4 On-site Wastewater Treatment Facilities

This rulemaking makes editorial or conforming changes to this Section, with several other changes.

In subsection (B)(3), this rulemaking deletes the requirement to use Table 1 design flows to determine the design flow of the on-site wastewater treatment facility, substituting this with a statement that the applicant shall design the facility based on the facility's design flow and the characteristics of the wastewater according to R18-9-A309(B)(3). In that subsection, the requirement to use Table 1 is specified.

This rulemaking revises subsection (B)(4)(b) by using the term "hydraulic analysis" instead of "linear loading rate analysis" and provides the specific soil absorption surfaces that must be used in the hydraulic analysis calculations.

In subsection (B)(4)(c), this rulemaking requires the applicant to design caps and covers to protect from damage and prevent entry from rodents, mosquitoes, flies, or other organisms (vectors) capable of transporting disease causing organisms (pathogens).

This rulemaking allows in subsection (4)(h) an applicant to follow a reference design on file with the Department and requires the applicant to submit that information with the NOI. The Department intends to maintain a file of acceptable reference designs for technologies allowed by the various general permits. Each reference design will consist of drawings, equations, and tables to properly configure the facility to specific site conditions, and a general list of site conditions for which the reference design is appropriate. The Department will maintain a list of reference designs on the Department's web site.

In subsection (C), this rulemaking revises the table of default setbacks applicable to an on-site wastewater treatment facility to greatly improve its utility. The revised table received consensus approval by OWAC. The changes include numbering each setback category for ease in referencing, merging the setbacks from the septic tank and the disposal field into one column and moving the "Notes" into a column labeled "Special Provisions." For setback #2, this rulemaking clarifies that any document indicating agreement from adjacent property owners must be "appropriately recorded." This rulemaking adds the qualifier "horizontally from" to the special provisions for setbacks #5, #6, #8, and #10 through #12 and the special provision for setback #7 to clarify how to measure the setback distance. This rulemaking revises the setback requirement in setback #8 to apply to washes with a drainage area of 20 acres instead of 5 acres. Based on feedback from stakeholders, 5 acres is too small an area for defining a drainage area, so the Department established the setback to now apply to drainage areas of 20 acres or more.

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In the existing rule, application of setback #11 has been confusing. This rulemaking sorts out the variations that are encountered in dealing with downslopes and cut banks, several of which were not anticipated in the existing rule, and provides separate and appropriate setbacks for each. The setback distances are based on feedback from stakeholders and supported by the OWAC.

This rulemaking adds to the special provision in setback #12 the phrase “except for disposal works” to clearly state that disposal works may not be located under a driveway. This rulemaking adds a setback requirement for earth fissures at setback #15. If information is available about earth fissures, the on-site disposal area must be located at least 100 feet from the feature.

In subsection (D)(1), this rulemaking adds a sentence to clarify how to calculate the soil absorption area.

In the tables in subsection (D)(2), for the case in which a very permeable or very impermeable soil is encountered outside the range of the test methods, this rulemaking specifies that: “[a] site-specific SAR must be provided.” Regardless of the type of disposal works that is ultimately selected by the designer for installation in this type of soil, the sizing of the disposal works depends on a determination of a design SAR appropriate for the site conditions and quality of wastewater delivered to the disposal works. This rulemaking does not describe how to determine the design SAR in this circumstance because of the multitude of different types of out-of-range conditions that may exist and the different types of methods that may be used to determine an appropriate SAR. The Department expects the designer to determine a site-specific SAR for sizing the disposal works using appropriate methods and best professional judgment.

This rulemaking revises the adjusted soil absorption rate (SAR_a) equation in subsection (D)(3) for use when a limiting condition requires installation of an alternative system technology described in the 4.03 through 4.22 General Permits. Based on the first four years of data regarding on-site systems installed in Arizona under the 2001 rule, this equation comes into play less than 5 percent of the time. (The table in the Response to Comments section for R18-9-A317 indicates that 46,555 on-site wastewater treatment facilities were constructed in Arizona from 2001 through 2004. Alternative systems accounted for 2195 of those installations, or 4.7 percent of the total).

Although the adjusted soil absorption rate equation is applicable to less than 5 percent of installations, for those installations the SAR equation is critical for ensuring usage of a consistent design approach that allows proper sizing of disposal fields over the full range of treatment technology performance. Under this design approach, all alternative system technologies are evaluated according to their performance and, based on the equation, increasingly higher-performing systems can be designed with increasingly smaller disposal fields. Smaller disposal fields translate to lower cost to homeowners who must install an alternative system.

In 2001, the Department developed the SAR formula by combining two common design approaches into one comprehensive equation: 1) the equation by Dr. Rein Laak, which recognizes that better treatment performance, as measured by the content of biochemical oxygen demand (BOD_5) and total suspended solids (TSS) in the treated wastewater, allows usage of a greater wastewater application rate per square foot of soil and 2) studies showing that the wastewater absorption rate for low-permeability soils (clayey, fine-grained, or “tight” soils) is less benefited by better wastewater treatment performance than high permeability soils (coarse-grained or sandy soils). In this rulemaking, the Department incorporates an adjustment to the SAR equation to allow a greater benefit or “credit” across all soils for better wastewater treatment than is allowed by the 2001 rule equation. Specifically, for very tight soils ($SAR = 0.2$ gallons per day per square foot), the change to the equation in this rulemaking allows the wastewater loading rate to the soil to be increased from 4 to 9 percent. For very coarse soils ($SAR = 1.2$ gallons per day per square foot), the change to the equation allows the wastewater loading rate to the soil to be increased from 24 to 55 percent. These increases in allowable wastewater loading rate mean that disposal fields may be sized commensurately smaller than the current equation allows. In other words, the revised equation gives additional wastewater absorption credit for higher performance technologies for both fine-grained and coarse-grained soils, but the benefit is smaller for fine-grained soils and greater for coarse-grained soils. In either case, though, the revised equation reduces disposal field construction cost to homeowners.

Some stakeholders believe that the Department’s revised equation in this rulemaking still does not provide great enough credit for better wastewater treatment performance, especially for tight soils. The Department carefully considered this viewpoint in the development of the revised equation. Specifically, some stakeholders suggested that the formula published in “Pollutant Loads from Plumbing Fixtures and Pretreatment to Control Soil Clogging” by R. Laak, Ph.D., P.E., June 22, 1974, be used “as-is” for tight soils. However, as stated by Dr. Laak in his paper, the formula cannot be used for tight soils. Accepting Dr. Laak’s equation without adjustment would result in too great a wastewater loading rate in tight soils and consequent disposal field failures.

By combining the two approaches mentioned previously, the Department’s equation provides a seamless transition that accommodates the full range soil permeabilities and treatment performance improvement — from very clayey to very sandy soils, and from relatively low-performing conventional septic tank/disposal field systems to very high performance alternative treatment technologies. In summary, the Department’s equation helps to ensure that disposal works will not overload in tight soils, which could cause effluent to rise and pond on the land surface, nor promote excessively fast downward flow in highly sandy soils, thereby posing a pathogen risk to groundwater. The revised equation provides a consistent approach to disposal field design for alternative systems over the full range of treat-

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ment performance capabilities and soil permeabilities. Of course, the Department welcomes research that would further refine these design relationships.

This rulemaking revises subsection (D)(4) to exempt unaltered lots within pre-1974 subdivisions approved for on-site system installations from the requirement for providing a reserve area equal to 100 percent of the primary area. This language conforms to a Rule Clarification that the Department issued in February 2001. The provision in subsection (D)(4)(b) was added to address non-residential properties.

This rulemaking adds subsection (D)(5) to ensure that the designer considers performance of the disposal works in wet or cold weather. This aspect of the design is particularly important in the wetter areas of the state or where freezing weather is common.

Based on stakeholder input, this rulemaking makes several changes to the vertical separation requirements in subsection (E). In the existing rule, this subsection was difficult to apply because it lumped different types of limiting conditions together, including the depth to groundwater, in the determination of allowable vertical separation. This rulemaking reorganizes this subsection by distinguishing between categories of limiting conditions and provides appropriate vertical separation distances and other relevant requirements for each category, as follows:

- Subsection (E)(1) specifies the minimum vertical separation to the seasonal high water table for a disposal works described under R18-9-E302;
- Subsection (E)(2) specifies the minimum vertical separation to the seasonal high water table for a disposal works described under in any of the general permits in R18-9-E303 through R18-9-E322. This subsection allows the identification of minimum treatment works for achieving pathogen reduction when the available separation distance does not comply with subsection (E)(1). This allows higher performing systems that remove increasingly greater proportions of pathogenic organisms to be installed proportionately closer to the water table;
- Subsection (E)(3) specifies added treatment performance requirements when the vertical separation distance from the bottom of the disposal works to a subsurface limiting condition is small enough to potentially cause surfacing of wastewater. This subsection allows the identification of minimum treatment works for achieving pathogen reduction when the available separation distance does not comply with subsection (E)(1). This provision recognizes that, except for a disinfection device, other general permit technologies reduce micro-organism levels only down to 10^3 , or 1,000 cfu/100 ml, whereas disinfection devices (4.20 General Permit) can be reliably operated at full disinfection, i.e., at the 10^0 level. There is no other technology allowed by a general permit that operates in that gap. Also, when the limiting condition is so close to the surface (less than 4 feet), it is impractical to precisely design for a specific bacterial log reduction at 1/2-foot elevation difference intervals with respect to the subsurface limiting condition, considering the mounding of wastewater on top of the limiting condition. If mounding increases, which easily could happen due to small differences in soil absorption rate, measurement error in the depth to the limiting condition, or subsequent grading of the site, the chance of surfacing increases, with potential discharges of wastewater to the land surface that are undertreated by one or two log cycles. The requirement for full disinfection for those last few feet of soil between the limiting condition and the land surface is rooted in practicality to ensure that public health is protected; and
- Subsection (E)(4) specifies the vertical separation from the bottom of the disposal works to a subsurface limiting condition that promotes accelerated downward movement of insufficiently treated wastewater. In this case, a minimum of two feet of intervening soil is required for treatment or, alternatively, treatment down to the 10^6 level, 1,000,000 cfu/100 ml. Either of these should provide sufficient treatment to the wastewater before further downward percolation.

This rulemaking adds subsection (F)(4) to explicitly state that the requirements of Article 3 apply over manufacturer's specifications. An applicant may request that a manufacturer's specification override a design requirement of this rule by submitting a request under subsection (G), but the Department will not accept a request to override a requirement of subsection (D) or (E). The requirements in subsection (D) for SAR and disposal works sizing and subsection (E) for pathogen treatment in a zone of unsaturated flow within adequate soil should override any manufacturer's specification.

The first paragraph of subsection (G) in the existing rule states that a request under subsection (G) may be used for an alternative setback. The addition of subsection (G)(7) provides criteria for approval of such a request.

R18-9-A313. Facility Installation, Operation, and Maintenance for On-site Wastewater Treatment Facilities

This rulemaking makes mostly editorial and conforming changes to this Section. In subsection (B)(1), this rulemaking specifies that, in addition to inspecting and cleaning distribution components, the permittee shall pump accumulated residues from the components and then manage the residues to protect human health and the environment. This rulemaking deletes "pretreatment" and broadens the remaining term to include "wastewater treatment and distribution components" that include "pretreatment components." In subsection (B)(2), this rulemaking adds a requirement to "replace filters" according to manufacturer's specifications and for the permittee to manage residues to protect

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human health and the environment. In addition, based on stakeholder input, this rulemaking adds four new tasks for operation and maintenance manuals in subsections (B)(11) through (14).

R18-9-A314. Septic Tank Design, Manufacturing, and Installation for On-site Wastewater Treatment Facilities

This rulemaking makes editorial and conforming changes to this Section. This rulemaking updates the documents that are incorporated by reference in subsections (B)(1)(b), (3), and (4).

In subsection (A)(8), this rulemaking changes the minimum open space distance from the water level in the septic tank to the top of the tank from 12 inches to 9 inches to conform to the generally accepted national norm.

This rulemaking revises the format of subsection (C) including the title: “[c]onformance with design, material and manufacturing requirements.” During the informal process, stakeholders suggested that the Department should specify a certification process for septic tank manufacturers. Stakeholders envisioned either a certification process that the Department or a third-party will perform. Because the rule details very specific design, material and manufacturing requirements for a septic tank, this rulemaking adds a certification process where the manufacturer certifies that the tank was designed and manufactured according to the requirements in R18-9-A314(A) and (B). The Department does not believe that a certification process by the Department or a third-party is a necessary requirement because of the detailed design requirements. Based on the proposed language at subsection (C)(4), the manufacturer must ensure that the manufacturer’s certification along with the handling and installation instructions are provided with the sales documents for each septic tank.

This rulemaking makes several changes to subsection (D). For the introductory language in subsection (D), this rulemaking replaces “[a]n applicant” with “[t]he person designing the on-site wastewater treatment facility.” This change is appropriate because the applicant is not always the designer of the on-site wastewater treatment facility. The Department wishes to emphasize that the designer must be responsible for complying with the conditions in subsection (D). Based on feedback from stakeholders that resulted in a Rule Clarification issued by the Department in November 2001, this rulemaking replaces the table in subsection (D)(1) for the design liquid capacity of a septic tank with two new subsections (D)(1)(a) and (b).

Subsection (D)(1)(a) specifies the criteria for design liquid capacity of a septic tank and the daily design flow based on number of bedrooms and fixture count. This rulemaking replaces the table, eliminates the columns for number of occupants and number of baths, and modifies the entries for the maximum fixture count. The proposed table includes two fixture count groupings for each bedroom scenario. Based on the number of bedrooms and number of fixtures for the dwelling, the designer determines the required minimum design liquid capacity and the design flow for the on-site wastewater treatment facility. These fixture unit groupings provide an accurate way of sizing tanks for single family dwellings.

Subsection (D)(1)(b) includes a proposal for the number of fixture units associated with each type of fixture in a table format. This information is based on stakeholder feedback and essentially duplicates the guidance issued by the Department in the Rule Clarification noted in the previous paragraph. When calculating the number of fixture units to size the septic tank, the designer will rely on the information in this table. For example, for a home with two bedrooms with a bathroom with a low flow water closet (toilet), a single lavatory and bathtub, and a kitchen with a sink including a dishwasher, the fixture unit count will be eight (three for the toilet, one for the lavatory, two for the bathtub, and two for the sink/dishwasher). The designer will then look to the table in subsection (D)(1)(a) to determine the minimum design liquid capacity and the design flow for the on-site system. For two bedrooms and eight fixture units, the septic tank must be at least 1000 gallons and the design flow is 300 gallons per day.

Under subsection (D)(2), this rulemaking adds a statement that if the strength of the wastewater from a source other than a single family dwelling exceeds the strength of typical sewage, additional tank volume is required to provide more residence time in the tank for treatment of the added organic material. Based on stakeholder feedback, this rulemaking specifies in subsection (D)(3) that only two septic tanks may be placed in series and provides sizing requirements for the two tanks. The size of the first tank must be at least 67 percent of the total required tank capacity and the second tank must be at least 33 percent of the total required tank capacity.

This rulemaking makes editorial changes throughout subsection (E). More substantively, this rulemaking requires in subsection (E)(3) that the installer ensure that the septic tank effluent filter is removable for cleaning and maintenance. This is an important feature to ensure proper operation for the filter and on-site wastewater treatment facility. Based on the recommendation of the On-Site Wastewater Advisory Committee and feedback from other stakeholders, this rulemaking revises subsection (E)(4) to require in-field watertightness testing for all installed septic tanks. This requirement goes along with the manufacturer’s certification design to ensure that manufacturing requirements were met and the tank was not damaged during transport and installation. This rulemaking also eliminates the option of using a vacuum test to determine that a tank is watertight, as the vacuum test cannot determine stability of the tank in its excavation, as is the case with a tank that is fully weighted and demonstrates compliance with R18-9-A312(F)(2)(b) during the watertightness test.

R18-9-A315. Interceptor Design, Manufacturing, and Installation for On-site Wastewater Treatment Facilities

This rulemaking makes only editorial and conforming changes to this Section.

R18-9-A316. Transfer of Ownership Inspection for On-site Wastewater Treatment Facilities

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This rulemaking revises this Section. Notice of transfer inspections apply to all on-site wastewater treatment facilities when the property is transferred including any facility that was constructed and operated before January 1, 2001. This rulemaking clarifies in a new subsection (A) that an owner or operator of a facility that complies with R18-9-A316 also complies with the general transfer requirements described in R18-9-A304.

This rulemaking replaces the language in the old subsection (A) with new language in subsection (B). This new language requires the owner of a property (transferor) with an on-site wastewater treatment facility to hire an inspector to inspect the on-site wastewater treatment facility before the property is transferred. This rulemaking requires the transferor to ensure that the inspection occurs within six months of the property transfer date. This rulemaking also requires that a qualified inspector perform the inspection (subsection (B)) and describes the qualifications for such an inspector (subsections (B)(1) through (3)). Based on stakeholder comment, the Department added a qualification requirement for an inspector to hold a certificate of training from a course recognized by the Department. This rulemaking includes an enforcement date of July 1, 2006 for this requirement to allow various institutions to develop training courses and time for the potential inspectors to take the course. This rulemaking adds the types of licenses that may qualify a person as an inspector. This list includes licenses that reflect knowledge about wastewater treatment processes and on-site wastewater treatment facilities.

In subsection (C), this rulemaking describes requirements of the inspection. The inspector must complete a Report of Inspection and provide it to the transferor. The inspector must describe any observed deficiencies regarding the physical or operational condition of the on-site wastewater treatment facility and document any repairs completed by the inspector (subsection (C)(1)), indicate whether the tank was pumped or explain why it was not pumped (subsection (C)(2)), and provide the date of the inspection (subsection (C)(3)).

This rulemaking describes the information that the transferor must provide to the transferee including the completed Report of Inspection and documents in the transferor's possession on the permitting, operation and maintenance of the on-site wastewater treatment facility.

This rulemaking requires in subsection (E) that the transferee submit the Notice of Transfer along with a fee to either the county health or environmental agency if the on-site wastewater treatment facility was constructed after January 1, 2001 or to the Department if the on-site wastewater treatment facility was constructed before January 1, 2001. This rulemaking requires the forms for facilities constructed before January 1, 2001 to be submitted to the Department because this is a new program that will involve a large number of facilities. The Department intends to implement the program statewide on a consistent basis and then evaluate the delegation of that authority to the appropriate local health or environmental agency.

Based on stakeholder feedback, in subsection (F), this rulemaking waives the inspection requirement for any on-site wastewater treatment facility that was not put into service before the property is transferred. The transferee must complete a Notice of Transfer form, however. The fees for transfer of ownership transactions will be described in any revisions to the Water Quality Protection Service Fee rules at A.A.C. R18-14-102(C)(7)(c).

The rulemaking lists the effective dates for these requirements in subsection (G). The Department does not include a delayed enforcement date for transfer inspections for Type 4 on-site wastewater treatment facilities because these transfer inspections are required for those systems under the current rule. This rulemaking includes a delayed enforcement date for the transfer inspection requirement for on-site wastewater treatment facilities constructed before January 1, 2001. The transfer inspection for these facilities will be required on or after July 1, 2006. This period allows the Department time for implementation and outreach.

R18-9-A317. Nitrogen Management Area

As promised to the Governor's Regulatory Review Council and to stakeholders in December 2000, this rulemaking includes an approach to managing sources of nitrogen in a particular area when other provisions in the Department's regulatory program do not provide enough protection to an aquifer. The nitrogen management provisions are placed at the end of Article 3, Part A because they deal with facilities covered by general permits. The Department anticipates that this process will be used primarily to address areas where dense concentrations of septic tanks threaten or have caused groundwater contamination. For permittees covered by individual permits such as sewage treatment facilities, the Department has the authority under R18-9-A213(A)(3) to amend or revoke the individual permits if a source causes or contributes to the violation of an AWQS and the permittee does not intent to use the processes described in R18-9-A317 to address those sources.

This rulemaking adds a process for designating a new Nitrogen Management Area, modifying the boundaries of or requirements to a Nitrogen Management Area, or rescinding designation of a Nitrogen Management Area (subsection (A)). For an area where existing conditions or trends in nitrogen loading to an aquifer will cause or contribute to an exceedance of the AWQS for nitrate, this rulemaking lists 10 factors the Department will evaluate in its consideration of whether an area should be designated a Nitrogen Management Area. Review of these factors will ensure that any determination is appropriate for the site-specific circumstances. The Department will evaluate information that is available to it through Department databases, regional databases, national information sources (population), and other relevant information. Once R18-9-A317 becomes effective, the Department will set up a schedule for evaluating areas, most likely looking first at areas with known nitrogen contamination of groundwater.

Additionally, this rulemaking allows the Department to modify the boundary of or the requirements to a Nitrogen Management Area if the Department becomes aware of a material change to one of the 10 criteria or if the local agency adopts a master plan to sewer an area in 10 years or less from the date of adoption of a master plan for the area (subsection (A)(2)).

Stakeholders commented in the informal comment period that the Department needs to specify the triggers for each of the criteria and that those triggers need to be subject to a peer review process so that they are scientifically defensible. For the criteria listed in subsection (A)(1), either a trigger is not appropriate (e.g., subsection (A)(1)(a) – population of the area) or a trigger is implied (e.g., subsection (A)(1)(e) – existing contamination of groundwater by nitrogen species). Stakeholders also commented that the Department should require remedial investigation prior to designation. The Department does not agree that requiring remedial investigation prior to designation is necessary or appropriate. If information from a remedial investigation is available, then that will be considered based on the draft provision at subsection (A)(1)(j).

During the informal drafting process, some stakeholders commented that the Department should provide a list of Nitrogen Management Areas that the Department is considering for designation. The Department has not prepared such a list because the evaluation process will take time and the criteria will need to be finalized. Once the rule is final, the Department will compile all the information for those criteria, evaluate areas with respect to this information, and develop a candidate list of areas for potential designation and further study (subsection (B)).

If the need for nitrogen management in an areal is indicated by the detailed study, the Department will prepare a preliminary decision for designating the area. The basis for the decision will be specified in the preliminary report. As part of the preliminary designation process, this rulemaking requires the Department to provide a copy of the report on the Department's conclusions to the mayors and members of the Board of Supervisors of all towns, cities, and counties and to the presidents of all sanitary districts within the proposed Nitrogen Management Area (subsection (B)(1)). The Department considers it important for local authorities to participate in the management of nitrogen problems in their areas. To provide local, elected officials this level of participation in the decision-making process and to ensure that the Department receives unified input from each authority, the Department established the process described in subsection (B) to encourage one set of comments from each local authority. Local authorities may wish to consult with their employees who have the technical knowledge about this subject. Because the Department anticipates that the local authorities and sanitary districts will want to facilitate a stakeholder process for obtaining feedback from staff and stakeholders within their jurisdictions, the rulemaking provides time for that process (subsection (B)(2)). The Department includes a 120-day review period so that local authorities can solicit feedback from local stakeholders. All of these conditions apply when the Department proposes to modify or rescind a Nitrogen Management Area.

The Department specifies the final designation process for issuing, modifying, or rescinding a Nitrogen Management Area or for withdrawing a preliminary Nitrogen Management Area designation in subsection (C).

Subsection (D) describes the requirements for a Nitrogen Management Area. Any on-site wastewater treatment facility that will be constructed or replaced within a Nitrogen Management Area must include a means of nitrogen removal through an allowed general permit technology to achieve as a concentration of total nitrogen released to the native soil beneath the disposal works of no more than 15 mg/l (subsection (D)(1)). In addition, if a concentrated animal feeding operation (CAFO) is located within the Nitrogen Management Area, the CAFO will need to implement or modify best management practices. This may include lining any impoundment at the CAFO. Subsection (D)(3) of the rulemaking allows the Department to designate "special provisions" for the Nitrogen Management Area. Special provisions will have a regulatory basis and could include such things as:

- Corrective actions;
- Mitigation measures;
- Establishment or modification of best management practices; and
- For locations with a comprehensive master plan for construction of or connection to a sewage collection system, a tailored approach to allow installation of a conventional on-site wastewater treatment facility on a property as a temporary measure until the sewer connection is available.

ARTICLE 3. AQUIFER PROTECTION PERMITS – GENERAL PERMITS

PART B. TYPE 1 GENERAL PERMITS

R18-9-B301. Type 1 General Permit

For the 1.02 General Permit, this rulemaking allows the use of high quality reclaimed water that underwent denitrification (Class A+ or B+) for non-drinking water pipelines by adding language to subsection (B)(1).

For the 1.03 General Permit, this rulemaking expands this general permit to cover discharges from hydrostatic test of a tank or an appurtenance (accessories) for a pipeline or tank by adding language to subsection (C). This rulemaking deletes subsection (C)(3) and splits the conditions between subsections (C)(1) and (C)(5). For subsection (C)(1), this rulemaking adds the language requiring the removal of the liquid discharged to the impoundment within 60 days if the liner is 10 mils and adds an option to take up to 180 days to remove the liquid if the liner is 30 mils or greater. This rulemaking revises subsection (C)(2) to require that the permittee ensure that the calculated seepage rate of the lining system of the impoundment is less than 550 gallons per acre per day. This is the seepage rate that the Department typ-

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ically considers acceptable for liners. For subsection (C)(5), this rulemaking adds language to replace the last sentence of subsection (C)(3), "Any other methods for removal of the test waters shall be approved in advance by the Department." For most "other methods" the Department review will primarily consist of checking to see whether the method ensures that AWQS will be met. Subsection (C)(5) states that a discharge under an AZPDES permit may be an acceptable method if the discharge does not violate AWQS.

This rulemaking makes editorial and conforming changes to the 1.04 General Permit (subsection (D)).

In addition to editorial changes to the 1.05 General Permit, this rulemaking adds a sentence to specify coverage under this APP general permit for the discharge to a navigable water, if the discharge is already authorized by an AZPDES permit.

In the 1.06 General Permit (subsection (F)), this rulemaking updates the citation to the waste tires rules from R18-8-703 to the current provision at R18-13-1203.

This rulemaking includes editorial changes to the 1.07 General Permit at subsection (G).

This rulemaking expands the 1.08 General Permit at subsection (H) to cover chemical or incinerator toilets, or various types of privies, if a county health or environmental department allows this means of waste containment.

In addition to editorial changes to the 1.09 General Permit at subsection (I), subsection (I)(1) of this rulemaking clarifies that the following two classes of pre-2001 facilities are eligible for coverage under this general permit:

- Sewage treatment facilities with flows of less than 20,000 gallons per day; and
- On-site wastewater treatment facilities with flows less than 20,000 gallons per day.

These facilities were lumped together in pre-2001 general permits, but are clearly distinguished in this rulemaking because, since 2001, applicable APP regulatory requirements for the two classes of facilities have differed.

In subsection (I)(2), this rulemaking provides APP authorization to discharge from all on-site wastewater treatment facilities and sewage treatment facilities constructed before January 1, 2001, not just "permitted" facilities constructed before January 1, 2001 as stated in the existing rule. In other words, this rulemaking grandfathered in all pre-2001 facilities, regardless of whether documentation of any permitting or approval action by the Department or a local agency can be found. This expansion of general permit coverage to all pre-2001 facilities is a matter of practicality. It is well known that on-site wastewater treatment facilities are still being used that were constructed before approval processes existed, and for many operating facilities, permitting and approval records at local regulatory agencies have, over the years, been lost or destroyed. Furthermore, the existing rule provision has been interpreted by some local delegated agencies as a mandate to determine the permit status of a pre-2001 facility. These determinations will consume substantial resources for negligible public health or water quality benefit. In reality, the key issue is whether a pre-2001 system is being operated so that it does not pose a public health or environmental threat. Regardless of documentation of pre-2001 permit status, an on-site wastewater treatment facility retains coverage under this general permit only as long as it is operated in a responsible manner and does not violate any of the requirements specified in subsection (I)(2).

This rulemaking adds two new general permits in subsections (J) and (K) to deal with sewage collection systems that are not covered by the 4.01 General Permit and that were inadvertently omitted from coverage under any other general permit in the 2001 rulemaking.

The 1.10 General Permit at subsection (J) provides general permit coverage for certain sewage collection systems that were constructed before January 1, 2001. These include systems extending downstream from the point in a sewer pipe where the design flow is more than 3000 gallons per day and any system, regardless of size, that includes a manhole, force main, or lift station serving more than one dwelling. To retain coverage under this general permit, the system must be operated in compliance with the provisions of subsections (J)(1), (2), and (3). The 4.01 General Permit at R18-9-E301 covers new construction of sewage collection systems with these characteristics.

This rulemaking adds the 1.11 General Permit at subsection (K) and provides coverage for construction and operation of sewage collection systems that do not reach the size or complexity threshold of systems covered under the 1.10 General Permit. Under this general permit, coverage is provided for the operation of any such "sub-threshold" system, regardless of construction date, and construction of any new system with these characteristics. Subsections (K)(1) through (8) provide the criteria for coverage of construction and operation under this general permit. As indicated in subsections (K)(5) and (6), the Department expects that these systems will continue to be designed, reviewed, approved, and constructed under local agency oversight and procedures. Discharge violations under this general permit, however, are under Department authority and jurisdiction.

Finally, a 1.12 General Permit has been added in subsection (L) that provides coverage for certain concrete washout activities that are also covered under the Arizona Pollutant Discharge Elimination System (AZPDES) Construction Stormwater General Permit. Without this general APP, concrete washout activities will need coverage under the more complex Type 3 General Permit under R18-9-D301 or an individual APP. This general permit relies on the requirements of the AZPDES general permit and is aimed at protection of surface water quality, plus additional criteria specified in subsections (1) through (10) to ensure protection of groundwater quality.

ARTICLE 3. AQUIFER PROTECTION PERMITS – GENERAL PERMITS

PART C. TYPE 2 GENERAL PERMITS

R18-9-C301. 2.01 General Permit: Drywells That Drain Areas Where Hazardous Substances Are Used, Stored, Loaded, or Treated

This rulemaking makes editorial and conforming changes throughout this Section.

To address all drywells that were constructed before submitting an NOI, this rulemaking replaces the phrase “before January 1, 2001” in subsection (B) with “more than 90 days before submitting the NOI to the Department.” This rulemaking adds options for the site investigation at subsection (B)(2) that primarily conform to the options provided in the 2.04 General Permit because of the similar structure and nature of the discharge. The applicant needs to submit site investigation information via a statement from a registered engineer or geologist. The current rules focus on analytical results from sampling the drywell settling chamber sediment. The Department realizes that if the drywell has not been operated for very long, sediment may not have accumulated. This rulemaking adds an option for that situation. In addition, if the chamber was cleaned out within six months, the engineer or geologist must take soil borings or perform a groundwater investigation. The goal of the options is to ensure that the previous operation of the drywell did not discharge pollutants. This rulemaking adds language on where borings must be taken (subsection (D)(2)(c)) and an option for where coarse grained lithology prevents the collection of representative soil samples (subsection (D)(2)(d)). This rulemaking uses the soil remediation levels and groundwater protection levels as screening levels to determine whether there is a need for further investigation (higher concentrations than expected). In most cases, the boring location described in subsection (B)(2)(c) is an acceptable point of compliance as required under R18-9-A302.

New subsection (B)(3) requires the applicant to submit design information with the NOI so that the applicant demonstrates that the design of the drywell meets the requirements in subsection (C). This may be in the form of a statement on the NOI form.

Subsection (C)(3) replaces the reference to Arizona Department of Water Resources (ADWR) rules (12 A.A.C. 15, Article 8) with explicit instructions for when the driller encounters groundwater.

Subsection (C)(4) adds “or drainage area design” to clarify that more than just the drywell design can be used to remove, intercept, or collect pollutants from reaching the drywell. This rulemaking also adds the last sentence to inform applicants that flow control or pretreatment devices listed in R18-9-C304(D)(1) or (2) meet the design requirements of subsection (C).

This rulemaking adds two new design criteria: that the applicant record the accurate latitude and longitude of the drywell and develop and maintain a current site plan. Accurate locational information is critical for a permitting program. Global Positioning System (GPS) data or a site survey should provide accurate latitude and longitude information. In general, the location of the drywell means the top of the drywell. The site plan is a critical component of the design requirements, so that the Department can ensure that the applicant has considered all potential sources to the drywell and included appropriate design features.

Subsection (D) has been revised to include “maintenance requirements.” Although already prohibited by the initial statement in subsection (D)(1), this rulemaking adds an explicit prohibition on the release of industrial process waters or wastes to drywell.

In subsection (D)(2), this rulemaking replaces “detrimental practices” with “pollutants.”

In subsection (D)(4), the current rule allows the applicant to submit a plan that was prepared for another regulatory program as a substitute for the Best Management Practices Plan (BMPP) if it meets the requirements in subsection (D). The 3.01 General Permit is a Type 2 permit that should require little Department review time. The Department has experienced that when an applicant submits a substitute plan, Department review time increases because the Department must ensure that the plan met the conditions of subsection (D). This rulemaking adds a statement that if a substitute document is submitted for the BMPP, the permittee needs to provide a statement identifying the conditions of the substitute plan that satisfy the requirements of subsection (D). This cross-walk document will reduce the amount of time Department staff invests in reviewing a document that was not specifically created for compliance with this Type 2 General Permit.

This rulemaking revises subsection (D)(5)(b) to state that the BMPP is to address “any pollutant that may be present at the operation with the potential to reach the drywell.” The Department interprets the current language in this manner and includes this clarification.

This rulemaking adds examples to subsection (D)(5)(d) of inspection and maintenance activities that apply to the drywell and to the associated pretreatment and flow control devices. These practices came from R18-9-C304(F)(3) through (7) and apply if that type of feature has been installed. This rulemaking clarifies in subsection (D)(5)(e) that for the purposes of this general permit, employee training only has to be specific to the drywell and prevention of unauthorized discharges. This rulemaking adds subsection (D)(6) and requires the permittee to implement waste management practices to prohibit and prevent discharges. This is a critical component of any effective inspection and maintenance program.

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This rulemaking adds requirements for inspections to a new subsection (E). This language is based on the language currently in R18-9-C304(E) (proposed as R18-9-C304(F)). Consistent with R18-9-C304(E)(1), subsection (E)(1) requires the permittee to remove sediments annually or when 25 percent of the effective capacity of the drywell chamber is filled, characterize any sediments that are removed, and to dispose of the sediments properly. Consistent with R18-9-C304(E)(2), subsection (E)(2) requires the permittee to make repairs and perform maintenance to restore proper function of the drywell. These additions are common sense requirements that are being explicitly mentioned in rule to achieve effective inspections.

This rulemaking moves the recordkeeping requirements from subsection (E) to subsection (F)(1) and adds several other requirements including a requirement to maintain the records for at least 10 years to be consistent with the language currently in R18-9-C304(I). This rulemaking provides a list of the records that must be maintained based on other parts of the general permit. The additional records listed are necessary to demonstrate compliance with the general permit requirements and it is important for the permittee to keep those records.

This rulemaking revises subsection (G) on spills to conform with R18-9-C304(H). This rulemaking eliminates the reference to a spill of reportable quantities (or 25 gallons for petroleum products) and specifies a notification, sampling and reporting process in subsection (G)(1). The permittee must notify the Department about any spill to the drywell. Depending on what the data show, the Department may require the permittee to submit an application for clean closure or an individual APP. It is not appropriate to deal with an elaborate clean-up situation under a Type 2 General Permit. If there is a significant spill, the Department will handle it under clean closure or the individual APP process. This rulemaking references soil remediation levels and groundwater protection levels for investigation purposes only in subsection (G)(1)(d). If there is a spill, the applicant may have to go through a risk assessment process or closure with a Declaration of Environmental Use Restriction (DEUR) consistent with 18 A.A.C. 7, Article 2.

This rulemaking adds requirements for closing and decommissioning a drywell within a new subsection (H). This language is based on R18-9-C304(G).

R18-9-C302. 2.02 General Permit: Intermediate Stockpiles at Mining Sites

This rulemaking makes editorial changes to this Section and specifies in subsection (D) that closure requirements specified in R18-9-A306 also apply.

R18-9-C303. 2.03 General Permit: Hydrologic Tracer Studies

This rulemaking makes editorial changes to this Section.

R18-9-C304. 2.04 General Permit: Drywells that Drain Areas at Motor Fuel Dispensing Facilities Where Motor Fuels are Used, Stored, or Loaded

This rulemaking makes editorial and conforming changes throughout this Section.

This rulemaking reorders or modifies the current options and adds another option for site investigation in subsection (B)(2). The current rule focuses on analytical results from sampling the drywell settling chamber sediment. In addition, if the chamber was cleaned out within six months, the engineer or geologist must take soil borings or perform a groundwater investigation. This rulemaking adds language to describe where borings should be taken (subsection (D)(2)(c)) and the option for where coarse grained lithology prevents the collection of representative soil samples (subsection (D)(2)(d)).

In subsection (C)(1)(e), this rulemaking replaces the reference to Arizona Department of Water Resources (ADWR) rules (R12-15-816(I)(1) and (2)) with explicit instructions for when the driller encounters groundwater.

This rulemaking adds design requirements to subsection (C)(1). In subsection (C)(1)(f), this rulemaking requires the applicant to record the accurate latitude and longitude of the drywell. Accurate locational information is critical for a permitting program. Global Positioning System (GPS) data or a site survey should provide accurate latitude and longitude information. In general, the location of the drywell means the top of the drywell. This rulemaking moves the requirement for marking the drywell grate "Stormwater Only" from subsection (B)(2)(b) to subsection (C)(1)(g). In subsection (C)(1)(h), this rulemaking requires the permittee to develop and maintain a current site plan. The site plan is a critical component of the design requirements, so that the Department can ensure that the applicant has considered all potential sources to the drywell and included appropriate design features. This rulemaking requires the permittee to prepare design plans showing drywell and drainage design including the pretreatment and flow control methods for the drywell (subsection (C)(1)(i)).

This rulemaking makes editorial changes to (D) for the flow control requirements.

To conform to the organizational format of R18-9-C301, this rulemaking reorders subsections (E) and (F) and also subsections (G) and (I). Minor changes have been made to the new subsection (E). Editorial changes were made to subsection (G) and the permittee has been required to retain drywell sediment waste characterization and disposal manifest records and sampling plans, laboratory reports, and chain of custody forms for soil, sediment, and groundwater sampling (subsections (G)(5) and (6)).

In addition to editorial changes, this rulemaking specifies notification requirements for spills in subsections (H)(1)(d)(i) and (ii). Subsection (H)(2) has been revised to allow the Department to require submission of a clean closure or individual permit application instead of additional information on the spill. It is not appropriate to deal with an

elaborate clean-up situation under a Type 2 General Permit. If there is a significant spill, the Department will handle it under clean closure or the individual APP process.

The closure and decommissioning requirements were revised and moved to subsection (I). This rulemaking replaces the current provisions at subsections (G)(1)(c) through (e) with a requirement to remove the settling chamber in the new subsection (I)(1)(c). This is the ultimate requirement and the other steps are not necessary. The language currently at subsection (G)(2) is eliminated because the language in subsections (I)(1) and (2) specify the preferred approach. Minor editorial changes have been made to the language moved from the current subsection (G)(3) to the new subsection (I)(2) that clarify that the goal of closure is to verify that all material that contributed to the discharge has been removed and the permittee has eliminated any reasonable probability of further discharge and of exceeding any AWQS at the applicable point of compliance. In addition, language in subsections (G)(4), (5), and (6) has been deleted because it is covered by other language.

R18-9-C305. 2.05 General Permit: Capacity, Management, Operation, and Maintenance of a Sewage Collection System

This rulemaking adds a new General Permit to cover capacity, management, operation, and maintenance (CMOM) of a sewage collection system as a means to reduce or eliminate releases from this type of system. This rulemaking adds this general permit as a Type 2 General Permit and requires only notification and some reporting.

The 2.05 General Permit is an optional General Permit and it is available to any operator of a public or private sewage collection system.

This general permit provides details on how the Department will respond to a situation when the sewage collection system does not meet performance standards and experiences an SSO.

Subsection (A) contains a definition of “imminent and substantial threat to public health or the environment.” This event is considered a release of more than 2000 gallons or more than 50 gallons if any of five severity criteria are met (subsections (A)(2)(a) through (e)). For example, a release of more than 50 gallons is considered “imminent and substantial” if the release is to a perennial stream or within 100 feet of a school.

The 2.05 General Permit is available to an operator of either a pre- or post-January 1, 2001 sewage collection system, or combination of the two, of any size. This general permit allows an operator to operate and maintain the collection system under the terms of a CMOM Plan to achieve compliance with the seven performance standards listed in R18-9-E301(B). This rulemaking provides that the Department will review the adequacy and implementation of the CMOM Plan in considering any enforcement response (subsection (E)). The Department expects that many collection system owners will opt to obtain coverage under this general permit because of the benefits of operating under a CMOM Plan to meet APP program requirements. Operation under a CMOM Plan is desirable because of the Plan’s preventative approach to collection system management and incorporation of a program of infrastructure improvements to achieve and maintain compliance with performance standards.

In contrast, the 4.01 General Permit applies to newly constructed sewage collection systems that carry flows of greater than 3000 gallons per day. The 4.01 General Permit provides design and construction standards for these new systems, administrative procedures for design review and approval, and O&M requirements for post-construction operation. Continued operation of the system must strictly comply with the seven performance standards listed in R18-9-E301(B). Unlike the 2.05 General Permit, in which the Department must review a series of factors to determine its enforcement response, the Department can initiate enforcement immediately for problems such as sewage releases and inflow and infiltration (I&I) for a collection system operating under a 4.01 (or 1.10 or 1.11) General Permit.

This rulemaking requires submittal of a NOI under subsection (C) containing ownership and system information, a map of the collection system service area, and other information. This general permit does not require submittal of the actual CMOM Plan as part of the NOI.

Subsection (D) specifies the components of and requirements for the CMOM Plan. This includes instructions on steps to properly manage, operate, and maintain the system; to maintain sufficient capacity during base and peak flows, including storm flows; to minimize infiltration; to prevent SSOs and to respond to releases when they occur; and to report releases to the Department.

Subsection (E) provides the criteria the Department considers in determining its compliance response in the case of a sewage release. These include detailed criteria regarding the sufficiency of the CMOM Plan, compliance with the CMOM Plan, compliance with reporting requirements in this general permit, and whether the release substantially endangered public health or the environment. Some stakeholders wanted the Department to include “cause and effect” language into the rulemaking, in which the Department will consider certain causes, such as those outside of the control of the owner, as a reason for diminishment of the Department’s possible response. The CMOM Plan should be developed by the owner as a “living” management tool, not merely a document developed to fulfill the requirements of this general permit. The CMOM Plan will guide the system owner/operator in dealing with the full range of sewage collection system management issues such as SSO prevention and response, inflows and infiltration, maintenance, and capital improvements to increase capacity or otherwise upgrade the system.

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Stakeholders suggested during the drafting process that the Department include third-party liability or affirmative defense language. The factors in subsection (E) serve the same purpose. The Department will consider the facts relating to the release, evaluate against the factors mentioned in subsection (E), then weigh the totality of information in determining whether or to what extent to pursue enforcement.

As indicated in subsections (E)(1)(g) and (2)(b)(iii), the CMOM Plan must address management of flows from upstream sewage collection systems not under the ownership and operational control of the permittee. In the event of SSOs caused by these systems, the Department will assess these provisions of the Plan for sufficiency and permittee compliance and factor the results of that assessment into any enforcement determination. The fact that the Department explicitly weighs these aspects in making its determination should alleviate some concerns of stakeholders with regard to “cause and effect” and third-party liability.

As indicated in subsection (E)(1)(d), a “sufficient” CMOM Plan includes a capital improvement plan to achieve adequate wet weather flow capacity in its sewage collection system. This provision indicates that adequate wet weather flow capacity must be achieved within 10 years. The actual schedule must be specified in the capital improvement plan. Ten years may be necessary for major upgrades so that the permittee has time to raise the money, contract for the work, and make the construction upgrades. In the event of an SSO, the Department will review the capital improvement plan as to sufficiency and compliance with the schedule as a part of any enforcement determination.

Subsection (F) establishes reporting requirements under this general permit. A permittee must report an imminent and substantial release within 24 hours and follow up with additional information in writing within five business days. Each year, the permittee must submit a report to the Department before March 1 providing information on all releases greater than 50 gallons over the previous year. If the permittee has added or removed areas from the service area during the year and wishes those changes to be reflected in coverage under this general permit, the permittee shall provide an amended map of the service area boundaries with the annual report.

Subsection (G) provides public notice requirements in the case of repetitive SSOs at the same location. Under this provision, the permittee is required to post a notice warning of the potential for a release at any location experiencing three SSOs within a 12-month period.

R18-9-C306. 2.06 General Permit: Fish Hatchery Discharge to a Perennial Surface Water

This rulemaking adds a 2.06 General Permit to allow a fish hatchery to discharge to a perennial surface water if Aquifer Water Quality Standards are met at the point of discharge and the fish hatchery is operating under a valid AZPDES permit. This general permit specifies NOI requirements and design and operation requirements.

ARTICLE 3. AQUIFER PROTECTION PERMITS – GENERAL PERMITS

PART D. TYPE 3 GENERAL PERMITS

R18-9-D301. 3.01 General Permit: Lined Impoundments

In addition to editorial changes to this general permit, this rulemaking adds additional sources that may be discharged to a lined impoundment to subsections (A)(2)(a), and (l) through (n). The additional sources are condensate from refrigeration units, swimming pool backwash, hydrostatic test water from a pipeline, tank, or appurtenance previously used for transmission of fluid, wastewater treated through an oil/water separator before discharge, and cooling water or wastewater from food processing.

In subsection (C)(4)(a)(iii), this rulemaking adds a provision for the protection of the liner including that the permittee must ensure that the liner material is compatible with any substance that may be discharged to the impoundment.

The rulemaking also revises subsection (G)(3) to require that if evidence of leakage is discovered and soil remediation levels are exceeded, the permittee shall define the lateral and vertical extent of contamination and submit an action plan for achieving clean closure for the Department’s approval before implementing the plan.

R18-9-D302. 3.02 General Permit: Process Water Discharges from Water Treatment Facilities

In addition to editorial and conforming changes to this Section, this rulemaking makes changes to the 3.02 General Permit to allow wider applicability. In response to stakeholder comment received during the informal comment period, this rulemaking revises the general discharge requirements in subsection (A) to account for the liquid fraction and the solids fraction of the discharge from a water treatment facility. This rulemaking requires the liquid fraction to meet AWQS (subsection (A)(1)) and the solid fraction to qualify as an inert material (subsection (A)(2)).

R18-9-D303. 3.03 General Permit: Vehicle and Equipment Washes

This rulemaking makes only editorial or conforming changes to this Section.

R18-9-D304. 3.04 General Permit: Non-storm Water Impoundments at Mining Sites

This rulemaking makes only editorial or conforming changes to this Section.

R18-9-D305. 3.05 General Permit: Disposal Wetlands

This rulemaking makes only editorial or conforming changes to this Section.

R18-9-D306. 3.06 General Permit: Constructed Wetlands to Treat Acid Rock Drainage at Mining Sites

This rulemaking makes only editorial or conforming changes to this Section.

R18-9-D307. 3.07 General Permit: Tertiary Treatment Wetlands

This rulemaking makes only editorial or conforming changes to this Section.

ARTICLE 3. AQUIFER PROTECTION PERMITS – GENERAL PERMITS

PART E. TYPE 4 GENERAL PERMITS

R18-9-E301. 4.01 General Permit: Sewage Collection Systems

In addition to editorial or conforming changes, this rulemaking makes changes throughout this Section.

Subsection (A) clarifies that this general permit applies to construction and operation of new sewage collection systems and revises the description of the types of systems that are covered by this general permit. Based on stakeholder input and consistent with a rule clarification issued by the Department in April 2001, this rulemaking specifies that the threshold for coverage under this general permit is any sewage collections system constructed downstream from the point where the design flow in the sewer line is 3000 gallons per day. Additionally, a system of any size that contains a manhole, a force main, or lift station serving more than one dwelling is covered under this general permit. However, a gravity line conveying sewage from a single building drain directly to an interceptor, collector sewer, lateral, or manhole is not covered under this general permit. This type of sewer line, as well as sewage collection systems with a design flow of less than 3000 gallons per day that are not covered under this general permit (subsections (A)(2) and (3)) may be covered under the new 1.11 General Permit at R18-9-B301(K).

A performance standard has been added at subsection (B)(7) that requires the applicant to design the sewage collection system to minimize septic conditions in the collection system.

Subsections (C)(1) and (2) add the phrase “on a form approved by the Director” to ensure that the appropriate information is consistently provided. A requirement has been added for the construction quality drawings to show the horizontal and vertical locations of utilities within the area affected by the sewer line construction. Inclusion of this information makes it possible to determine conformance with setback requirements. Subsection (C)(6) has been revised to require the applicant to submit an operation and maintenance manual for all sewage collection systems. The 10,000 gallons or more per day restriction no longer makes sense because of the changes to subsection (A). This requirement will not apply if the applicant has already provided to the Department a manual applicable to the sewage collection system. In addition, a requirement has been included requiring the applicant to specify a 24-hour emergency number within the plan.

References to the technical standards incorporated by reference in subsections (D)(1)(b), (D)(2)(h)(i), (D)(2)(h)(ii), (D)(2)(j), (D)(3)(c), and (D)(3)(e)(ii) have been updated.

This rulemaking reorganizes the general provisions in subsection (D)(1). In the existing rule, the process for determining design flows and peaking factors for sewage collection systems was not clear. Subsection (D)(1)(a)(i) clarifies the methodology, which in summary determines the unit daily flow from Table 1 as follows: multiply by the dry weather peaking factor determined from the table in subsection (D)(1)(a)(1), and then add a wet weather infiltration and inflow rate.

Language has been added in subsection (D)(1)(a)(ii) to address the sizing criteria for lift station pumps and in subsection (D)(1)(a)(iii) to allow the applicant to justify lower unit flow values if the applicant documents the use of low flow fixtures, hydrographs of actual flows or other factors. Subsection (D)(1)(d) adds a design requirement so that the applicant ensures that sewage collection systems are separated from reclaimed water system components as specified in 18 A.A.C. 9, Article 6.

For gravity sewer line requirements in subsection (D)(2), this rulemaking deletes subsection (D)(2)(b)(iii) in the existing rule regarding restrained joints. Changes to subsection (D)(2)(b)(ii) and the existing subsection (D)(2)(b)(iv), renumbered in this proposal to (iii), now cover this situation. In subsection (D)(2)(c), the Department limits the length of sewer line that can be constructed beneath a floodway to no longer than the applicable manhole spacing distance specified in subsection (D)(3), unless the applicant submits and justifies a request under the procedure described in R18-9-A312(G). Subsection (D)(2)(c) establishes additional criteria for sewer lines constructed beneath a floodway, including a requirement to ensure that the sewer line is placed below the calculated 100-year bed degradation depth.

Subsection (D)(2)(d) has been revised to require that all sewage collection systems covered by this general permit are 8 inches or more in diameter except for dead end sewer lines. The provision at subsection (D)(2)(d)(ii) that allowed 4- to 6-inch sewer lines to be used for sewage collection systems for a small manufactured home, mobile home or recreational vehicle park has been deleted.

Subsection (D)(2)(e) has been revised to require the design of the last 400 feet of a dead end sewer to accommodate flow of 3 feet per second when flowing full. In response to stakeholder input, this rulemaking also adds a provision in subsection (D)(2)(e)(iii) that requires the applicant to ensure that the ratio of flow depth in the pipe to the diameter of pipe does not exceed 0.75 in peak dry weather flow conditions.

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The Department received a comment regarding subsection (D)(2)(k) that questioned the validity and usefulness of the lamp lighting test for determining uniform slope. Note that this subsection also allows the use of remote camera or other methods approved by the Department. Nevertheless, the Department understands the commenter's concern about the efficacy of the lamp lighting test and the use of more appropriate alternative methods. However, since the Department is not aware of published standard methods for alternative tests to reference in this rule, the Department proposes working with stakeholders following this rulemaking to develop guidance to ensure that testing methods are valid. This could include development of alternative testing methods, such as mandrill testing, that the Department could approve under subsection (D)(2)(k). Lastly, this rulemaking adds a requirement in subsection (D)(2)(l) to minimize planting within the constructed area of the sewage collection system of plant species with roots likely to reach and damage the sewer.

Subsection (D)(3) deals with the design of manholes. In subsection (D)(3)(a), the Department increased the maximum manhole spacing for a sewer pipe diameter of less than 8 inches from 300 feet to 400 feet. In subsection (D)(3)(e)(i) regarding watertightness testing of manholes, based on stakeholder input, the Department changed the criteria for the maximum drop in water level in a watertightness test from 0.001 of total manhole volume per hour to 0.0034. In response to stakeholder input, this rulemaking incorporates the National Association of Corrosion Engineers (NACE) standard for Holiday testing, a method that may be used for watertightness testing of manholes. This method is only valid for lined manholes constructed with uncoated rebar. This rulemaking includes some substitutions for terms used within that method as noted in subsections (D)(3)(e)(iii)((1)) and ((2)).

Subsection (D)(4)(f) clarifies that the pressure test for force mains must be conducted for a period of two hours, after which the force main must be tested for leakage. In this rulemaking, both in subsection (D)(4)(h) for force mains and subsection (D)(5)(c)(vi) for lift stations, the Department added a requirement for the applicant to ensure that a force main or lift station is designed to control odor.

Based on stakeholder input, this rulemaking adds a provision regarding the design of depressed sewers (sometimes referred to as inverted siphons) in subsection (D)(6). Five specific design criteria are provided in subsections (D)(6)(a) through (e).

Subsection (E)(1)(c) requires that satisfactory field test results from the deflection, leakage, and uniform slope testing be included with the Engineer's Certificate of Completion. The existing rule requires only confirmation that those tests were performed.

Subsection (F) has been revised to conform to the changes in subsection (A) and to eliminate any overlap with the 2.05 General Permit. This rulemaking also moves the requirement in subsection (D)(5)(f) to subsection (F)(3). Subsection (F)(2) requires the permittee to operate the sewage collection system according to operator certification requirements in 18 A.A.C. 5, Article 1. This rulemaking includes recordkeeping requirements in subsection (G).

Subsection (H) specifies that repairs are not subject to NOI submittal requirements. Repairs include all types of sewer rehabilitation (inversion lining, sliplining, pipe bursting, etc.) but do not include changes in vertical or horizontal alignment (replacement sewers adjacent to existing sewers or any other changes in grade or horizontal alignment).

The following table compares the requirements of the four general permits in this rulemaking that cover sewage collection systems.

Framework for General Permit Coverage of Sewage Collection Systems				
Applicability	GP 1.10 (new)	GP 1.11 (new)	GP 2.05 (new)	GP 4.01 (existing)
1. Date of System Construction				
a. Before 1/1/01	X	X	X	
b. Since 1/1/01		X	X	X
2. Daily Design Flow				
a. Collection system serving upstream of point where the daily design flow is 3000 gpd*, except any system that includes a manhole, force main, or lift station serving more than one dwelling.		X	X	
*Includes a single gravity sewer line conveying sewage from a building drain directly to an interceptor, lateral, or manhole, regardless of flow.				

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b. Collection system downstream of point where the daily design flow is 3000 gpd, and any system that includes a manhole, force main, or lift station serving more than one dwelling, except a single gravity sewer line as noted above	X		X	X
3. Activities Covered by Permit				
a. Design & construction		X		X
b. O&M	X	X	X	X
4. Standard of Compliance That Informs ADEQ Enforcement Action Determination				
a. Operator strictly complies with the 7 performance standards established in GP 4.01	X	X		X
b. Operator follows a CMOM Plan that adequately addresses capacity, management, and O&M with respect to releases and the other 7 performance standards			X	

R18-9-E302. 4.02 General Permit: Septic Tank With Disposal by Trench, Bed, Chamber Technology, or Seepage Pit, Less Than 3000 Gallons Per Day

Similar to the change in R18-9-A312, this rulemaking removes the distinction between shallow and deep trenches and establishes the same requirements for a trench as those that applied to a shallow trench in the existing rule. Subsection (A)(2)(c) and (C)(4) replaces the term “disposal field using chamber technology” with “chamber technology.”

Subsection (C)(1)(h) adds another reason why paving over disposal works is not desirable.

This rulemaking revises the trench absorption area calculation in subsection (C)(2)(a) to allow up to 48 inches below the bottom of the disposal pipe for the maximum trench sidewall areas. In the existing rule, only the distance from 12 inches to 36 inches below the bottom of the disposal pipe could be counted. This change was included based on stakeholder input. Subsection (C)(2)(b) has been revised to require disposal pipes to be level and the applicant to calculate the trench sizing from the design flow established in R18-9-A312(B). This latter item was inferred in the existing rule but not explicitly stated. Both of these changes ensure the trench is designed and constructed properly. Minor editorial changes have been made to the table under subsection (C)(2)(c) including adding a design criterion for the trench absorption area of 11 square feet (maximum) per linear foot of trench at criterion #4 based on the consensus recommendation of the OWAC, and adding Note #1 to address the length of a trench. In response to stakeholder input, subsection (C)(2)(d) was added to specify that the applicant may substitute clean, durable, crushed and washed recycled concrete for aggregate with restrictions.

The table in the new subsection (C)(3)(b) has been revised by making editorial changes and adding a new design criterion for the spacing of disposal beds. This rulemaking also adds a Note at the end of the table to explain the term “effective depth.”

The equation in subsection (C)(4) was revised for the effective absorption area for chambers by replacing the “1.43” with “1.8” and revising the definition of width to the exterior bottom width of the chamber. The multiplier and chamber-based measurement incorporates recently published performance testing results.

The reference to R18-9-A311 in subsection (C)(5)(a) has been deleted. A reference to R18-9-A311(B)(1) has been added to subsection (C)(5) to highlight the fact that seepage pits are only allowed under certain conditions.

This rulemaking adds a requirement to subsection (C)(5)(c) when multiple seepage pits are used. Seepage pits must be spaced a minimum of 12 feet or three times the diameter of the seepage pit. This requirement is in lieu of the stricken language in subsection (C)(5)(h)(ii) and derives from a recommendation in the June 2003 University of Arizona study on seepage pits and deep trenches, “Comparison of the Effectiveness of Trenches and Seepage Pits for Treatment of Septic Tank Effluent in Arizona,” which was commissioned by the Department.

Subsection (D) has been added to remind applicants of the operation and maintenance requirements in R18-9-A313.

R18-9-E303. 4.03 General Permit: Composting Toilet, Less Than 3000 Gallons Per Day Daily Flow

In addition to the editorial and conforming changes to this Section, this rulemaking adds requirements for disposal works associated with the use of a composting toilet in subsections (B)(2), (F), and (G)(2). The existing rule specifies requirements only for the composting toilet unit itself. In this rulemaking, the applicant is required to properly manage all of the wastewater flows generated at the site using the composting toilet in conjunction with a means for disposing or reusing the remaining flows. This rulemaking specifies that the remaining wastewater flows must be treated with a properly sized interceptor and dispersed into the subsurface in a properly sized trench or bed. This requirement does not apply to gray water that is separated out from the wastewater stream and reused. For this situation, the gray water may be used in accordance with the reclaimed water permitting requirements in R18-9-711 or R18-9-719, as applicable, and does not have to be routed through the interceptor to the disposal works. If gray water is not reused

under either of these provisions, this rulemaking specifies the interceptor size and design flow for treatment and subsurface disposal of all wastewater not associated with the composting toilet. However, if gray water is reused under R18-9-711 or R18-9-719, the remaining wastewater from the property—kitchen wastewater—still must pass through an interceptor into the subsurface disposal works. In this situation, the interceptor may be sized smaller but the design flow and, hence, disposal trench or bed size, is the same as if gray water is not being reused.

This rulemaking adds design requirements for the subsurface disposal works for the wastewater sources in a new subsection (F). The table under subsection (F)(1)(d)(i) specifies minimum interceptor size for dwellings. This table includes requirements for small homes with less than seven fixture units to accommodate homes that are focused on extreme water conservation. Subsection (F)(2) requires that the dispersal of wastewater is by trench or bed consistent with the requirements in R18-9-A312 and R18-9-E302 for those types of disposal works. Subsection (F)(3) specifies setback requirements from the dispersal works.

This rulemaking includes language regarding reference design requirements in subsection (H).

In the Department's next rulemaking for reclaimed water permits, 18 A.A.C. 9, Article 7, the Department will make a corollary change in R18-9-711(A)(10) to exclude composting toilets from the requirements of that provision. This is because all wastewater flows generated at a site using a composting toilet are now fully addressed in this rulemaking as described in the preceding paragraphs. The Department intends to begin the stakeholder process for revising the reclaimed water permitting rules in early 2005.

R18-9-E304. 4.04 General Permit: Pressure Distribution System, Less Than 3000 Gallons Per Day Daily Flow

In addition to editorial and conforming changes to this Section, this rulemaking updates the reference to the technical standard that is incorporated by reference in subsection (D)(3)(a)(i). Based on stakeholder input, this rulemaking also adds six design requirements for pressure distribution systems at subsections (D)(3)(a)(vi) through (xi). Subsection (D)(4) allows a 10 percent credit (increase in design SAR by a factor of 10 percent) for use of a pressure distribution system in a situation where it is not specifically needed. This addition is based on stakeholder input and takes into account the superior dispersal characteristics of a pressure distribution system.

This rulemaking moves and condenses the installation requirements currently at subsection (E) to subsection (D)(3)(b). Subsection (E)(1) has been deleted because the essential concept is stated in subsection (D)(2)(c)(i). Subsection (E)(2) was deleted because these provisions are pertinent to surface disposal and have been added as conditions in the new surface disposal general permit at R18-9-E321(D)(3).

R18-9-E305. 4.05 General Permit: Gravelless Trench, Less than 3000 Gallons Per Day Daily Flow

This rulemaking makes only editorial and conforming changes to this Section.

R18-9-E306. 4.06 General Permit: Natural Seal Evapotranspiration Bed, Less Than 3000 Gallons Per Day Daily Flow

In addition to the editorial and conforming changes to this Section, this rulemaking deletes subsection (D) on reference design and subsection (E) on alternative design because they are covered in R18-9-A312(B)(5) and (G), respectively. This rulemaking adds subsections (D) through (H). Subsection (D) specifies NOI requirements for natural seal evapotranspiration (ET) beds. Subsection (E) adds specific design requirements for this technology, replacing a requirement to use a reference design in the existing rule. These design requirements borrow from the design requirements contained in the 4.07 General Permit for lined ET beds at R18-9-E307(E). Subsection (F) specifies installation requirements modeled after the language at R18-9-E307(F). Subsection (G) specifies an additional Discharge Authorization requirement that the applicant must submit leak test results signed and sealed by a Professional Engineer (P.E.), similar to the requirements in R18-9-E307(G). Also, subsection (H) specifies operation and maintenance requirements similar to R18-9-E307(H).

R18-9-E307. 4.07 General Permit: Lined Evapotranspiration Bed, Less Than 3000 Gallons Per Day Daily Flow

In addition to editorial and conforming changes to this Section, this rulemaking updates the reference to the technical standard that is incorporated by reference in subsection (E)(1). Subsection (E)(2) adds a requirement that the applicant shall ensure that the media used in the ET bed is sand or other durable material.

R18-9-E308. 4.08 General Permit: Wisconsin Mound, Less Than 3000 Gallons Per Day Daily Flow

In addition to editorial and conforming changes to this Section, this rulemaking establishes two performance categories for the Wisconsin Mound technology. This rulemaking designates the current performance requirements as "Category B" and adds requirements for a new "Category A" that achieves better treatment levels for TSS, BOD₅, and total coliform. Subsection (B)(1)(d) establishes a total coliform value of log₁₀3 for performance. The superior treatment provided by the Category A configuration allows the Wisconsin Mound technology to be used under R18-9-A312(E)(2) when the available vertical separation to groundwater is either 2 feet or 4 feet, depending on the properties of the native soil.

Although updated manuals are available, this rulemaking retains the incorporation in subsection (C)(3) of the 1990 Mound Edition of the manual for the Wisconsin Mound technology because it is compatible with the other provisions of the rule relative to design and site evaluation.

This rulemaking updates the technical standard incorporated by reference in subsection (D)(2).

The reference to R18-9-A312(G) has been deleted from subsection (D)(2)(b) because it is not necessary.

Subsection (D)(6) has been amended to specify the appropriate minimum depth of mound bed media for the two performance categories. For Category A, this rulemaking specifies that 24 inches is the minimum depth of mound bed media. For Category B, this rulemaking applies the current requirement for the minimum depth of mound bed media of 12 inches.

This rulemaking adds a reminder that if the mound system shows evidence of overloading or failure, increasing the basal area may be appropriate, but it may require submission of a new NOI if the footprint will be extended more than 10 feet (R18-9-A309(A)(9)(b)(iv)). This language replaces the language currently in subsection (F)(2).

R18-9-E309. 4.09 General Permit: Engineered Pad System, Less Than 3000 Gallons Per Day Daily Flow

In addition to editorial and conforming changes to this Section, this rulemaking replaces the word “treated” with “pretreated” in subsection (A)(1)(a) because the wastewater must first go through a septic tank as required in subsection (D)(1). This clarifies that the engineered pad provides added treatment to reach the performance levels instead of implying that the wastewater is treated to those levels before it reaches the engineered pad.

Subsection (B)(2) clarifies the basis for pad listing under R18-9-A309(E). Subsection (D)(3) specifies spacing between multi-row pad installations in a manner similar to those specified for trench and sand-lined trench technologies.

A commenter requested that the Department include a “technology specific SAR” in the rule for a proprietary treatment product covered under this Section. It is not appropriate to include technology-specific SARs in the rule because a fundamental premise of the SAR is that it is technology-independent, depending only on documented site and soil conditions under R18-9-A310, and the tables and equation in R18-9-A312(D). A “design SAR” for any proprietary treatment technology is determined in the existing rule under R18-9-A312(D)(2) or (3) based either on the default performance value for that technology as specified in its general permit in Article 3, Part E or its listed performance value under R18-9-A309(E), as applicable.

R18-9-E310. 4.10 General Permit: Intermittent Sand Filter, Less Than 3000 Gallons Per Day Daily Flow

In addition to editorial and conforming changes to this Section, this rulemaking updates the reference to the technical standard that is incorporated by reference at subsection (D)(4). The inlet surface loading rate in subsection (D)(5) was adjusted to be consistent with the loading practices and the specifications for the same element of a sand filter unit process as used for sand-lined trench and mound technologies.

R18-9-E311. 4.11 General Permit: Peat Filter, Less Than 3000 Gallons Per Day Daily Flow

In addition to editorial or conforming changes to this Section, this rulemaking requires the applicant to submit additional specifications about the peat media used in the peat filter in subsections (A)(1)(b), (c) and (d).

The design requirement for a dosing timer in subsection (D)(1)(b) has been so that it provides more flexibility. The main requirement is to dose at the applicable loading rate.

Subsection (D)(2)(b) has been deleted to eliminate an error in the original rulemaking.

This rulemaking revises the peat bed inlet surface loading rate in subsection (D)(2)(d) to 5.5 gallons per day per square foot of inlet surface based on new performance information for peat module technology.

The design requirement for peat filter bed system in subsection (D)(3)(e) has been revised to provide more flexibility. The main requirement is for the peat to meet the porosity and particle size specifications. The Department includes the change because of an improved understanding of material specifications.

R18-9-E312. 4.12 General Permit: Textile Filter, Less Than 3000 Gallons Per Day Daily Flow

In addition to editorial or conforming changes to this Section, this rulemaking requires in subsection (D)(3)(a) that the applicant ensure that the textile media loading rate and wastewater recirculation rate are based on Department-approved performance data.

R18-9-E313. 4.13 General Permit: Denitrifying System Using Separated Wastewater Streams, Less Than 3000 Gallons Per Day Daily Flow

This rulemaking changes the title of this Section to a generic title for systems that denitrify using separate wastewater streams. This rulemaking adds language to define tank “A” as the tank holding dishwasher, kitchen sink, and toilet flush water and tank “B” as holding all other wastewater.

In addition to other editorial or conforming changes to this Section, this rulemaking adds subsections (C) and (D) as a reminder to applicants about the NOI, design, installation, operation, and maintenance requirements specified elsewhere in this rule.

The current subsection (D) has been deleted because it is covered under R18-9-A312(G).

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R18-9-E314. 4.14 General Permit: Sewage Vault, Less Than 3000 Gallons Per Day Daily Flow

The use of a sewage vault is appropriate either for a property with severe site or operational limitations that is far from a sewage collection system (subsection (A)(1)) or as a short-term measure, less than two years (subsection (A)(2)). This rulemaking adds “or operational” to the language in subsection (A)(1) to address vault systems used in remote locations, e.g., parks or campgrounds, where employees may not be available on a frequent basis to maintain a system that requires pumps, motors, or controls, or that requires a source of water.

In addition to editorial changes to this Section, this rulemaking moves subsection (C), which currently includes language on restrictions, to subsection (D), which addresses design requirements, and adds or replaces requirements for the size of the vault, preventing the vault from floating, leak testing, installing a water level indicator alarm or signal, and having a pumping contract.

The current subsection (E) has been deleted because it is covered under R18-9-A312(G).

R18-9-E315. 4.15 General Permit: Aerobic System, Less Than 3000 Gallons Per Day Daily Flow

In addition to editorial or conforming changes to this Section, this rulemaking changes the 4.15 General Permit so that it addresses aerobic systems as a treatment type without specific requirements for the disposal method. In the existing rule, the 4.15 General Permit covers aerobic systems with subsurface disposal and the 4.16 General Permit covers aerobic systems with surface disposal. This rulemaking revises the 4.15 General Permit to establish one general permit to cover aerobic system treatment technology. This change eliminates the need for the 4.16 Aerobic System with Surface Disposal General Permit. Additionally, the Department considers sequencing batch reactor technology, currently covered by the 4.21 General Permit in R18-9-E321, to be a class of aerobic system and therefore it falls under the 4.15 General Permit. This change eliminates the need for the 4.21 Sequencing Batch Reactor General Permit.

Subsurface disposal, currently covered in this Section, continues to be available under several different Type 4 General Permit options. By revising this Section to focus on aerobic system treatment technology only, the designer of the wastewater distribution and disposal subsystems has the freedom to use other general permits to satisfy the design, installation, and operational objectives of the APP rule.

References to subsurface disposal have been deleted throughout this Section. Language has been added to subsections (A)(2)(d), (B)(1)(c), (B)(2)(c), and (C)(6) regarding removal of nitrogen from the wastewater. If the applicant or designer believes that an aerobic system is appropriate for reducing the nitrogen level in wastewater, this rulemaking requires in subsection (C)(6) that the applicant submit information on the nitrogen removal capabilities of an aerobic system with the NOI including evidence of product listing under R18-9-A309(E) or third-party test results verifying the results.

An option has been added in subsection (B)(2) for using an aerobic system that meets an acceptable, but lower effluent quality, if the Department, through its product listing process under R18-9-A309(E), determines that the system provides enhanced cost-effectiveness and operational simplicity.

Subsection (C)(4) requires that pretreatment components be submitted with the NOI for the system.

Subsection (D) adds two additional design requirements. In subsection (D)(3), this rulemaking requires the applicant to ensure the system provides a clarifier after aeration treatment for any technology that treats to a better quality (lower levels of BOD₅, TSS, nitrogen, and Total Coliform) than specified in subsection (B)(1). In subsection (D)(4), this rulemaking requires that the applicant ensure that the system has ports for inspection and monitoring.

A new subsection (F)(2) requires that the permittee ensure that filters are cleaned and replaced as necessary to ensure proper operation and maintenance. This rulemaking specifies reference design requirements in a new subsection (G).

R18-9-E316. 4.16 General Permit: Nitrate-reactive Media Filter, Less Than 3000 Gallons Per Day Daily Flow

The current 4.16 General Permit for Aerobic Systems with surface disposal has been deleted. Aerobic systems are now covered solely under the 4.15 General Permit. Surface disposal as a disposal option is now addressed in this rulemaking in the new 4.21 General Permit (R18-9-E321).

A new general permit for a nitrate-reactive media filter technology has been added. This rulemaking establishes restrictions, performance criteria, NOI requirements, and design, installation, operation, and maintenance requirements for this technology. As indicated in subsection (C)(3), this technology is capable of reducing the total nitrogen from the wastewater to a level at or below 10 milligrams per liter, which results in a wastewater that meets the AWQS for nitrate of 10 milligrams per liter.

R18-9-E317. 4.17 General Permit: Cap System, Less Than 3000 Gallons Per Day Daily Flow

In addition to editorial or conforming changes to this Section, this rulemaking adds a trench construction design requirement at subsection (D)(3)(c)(iii) specifying that the horizontal extent of the finished fill edges of the cap system extend at least 10 feet beyond the nearest trench sidewall or endwall.

R18-9-E318. 4.18 General Permit: Constructed Wetlands, Less Than 3000 Gallons Per Day Design Flow

This rulemaking makes only editorial or conforming changes to this Section and deletes subsection (D) because it is redundant of R18-9-A312(G).

R18-9-E319. 4.19 General Permit: Sand Lined Trench, Less Than 3000 Gallons Per Day Design Flow

In addition to editorial or conforming changes, this rulemaking updates the reference to the technical standards incorporated by reference in subsections (D)(1)(a) and (b). Subsection (D)(2)(a) requires that distribution pipes are capped on the end for proper operation. Subsection (D)(2)(b) has been revised to state that the spacing between trenches must be 5 feet or two times the distance between the bottom of the distribution pipe and the bottom of the trench, whichever is greater.

R18-9-E320. 4.20 General Permit: Disinfection Devices, Less Than 3000 Gallons Per Day Design Flow

In addition to editorial or conforming changes, this rulemaking includes several revisions to this general permit for disinfection devices. Subsection (A) adds a requirement to ensure that the quality of effluent that will be conveyed to a disinfection device is equal to or better than the performance level specified under the R18-9-E315(B)(1). The Department envisions that the primary use of a disinfection device will be with the 4.21 General Permit for surface discharge, therefore the effluent being conveyed to the disinfection device must be of good enough quality to reliably treat to remove bacteria to a nominally free level.

This rulemaking reorganizes and revises the language in subsections (C) and (D). The language in (D)(2) regarding auxiliary control mechanism, now fail-safe wastewater control or operational process, has been moved to the performance specifications under a new subsection (C)(1). The performance criteria have been revised and moved from subsections (C)(1)(a), (b) and (c) to the new subsection (C)(2) for the amount of coliform bacteria in, the appearance of, and the dissolved oxygen content of the discharge. A new subsection (D) has been added for design requirements and includes the current introductory language in subsection (C)(2). A table has been added in subsection (D)(1)(a) to specify the required amounts of available chlorine that must be maintained in the wastewater during treatment. This is necessary to ensure adequate reduction of bacteria. Design requirements have been added in subsection (D)(2) for contact chambers and a general provision for devices that disinfect using other than chlorine.

This rulemaking requires inspection of the disinfection device at least once every three months by a qualified person. A qualified person is one who has working knowledge of the type of on-site wastewater treatment facility and is capable of maintaining and servicing the disinfection device as specified by the manufacturer to meet treatment performance requirements. The Department's requirement to provide evidence of a service contract under R18-9-A309(C)(2)(d) will help to ensure that the permittee uses a qualified person to do the inspections.

Subsection (E) has been deleted because it is addressed in R18-9-A312(B)(5) and subsection (F) has been deleted because it is addressed in R18-9-A312(G).

R18-9-E321. 4.21 General Permit: Surface Disposal, Less Than 3000 Gallons Per Day Design Flow

This rulemaking deletes the general permit for Sequencing Batch Reactors because the Department considers this technology to be a type of aerobic system that is now included under the 4.15 General Permit.

In response to stakeholder feedback to provide a separate general permit for surface disposal, this rulemaking places a new general permit in this Section. This general permit contains much of the language relating to surface disposal that is currently in R18-9-E316, regarding a general permit.

The performance criteria in subsection (B) are the same as those in the current R18-9-E316(B). This rulemaking includes restrictions in subsection (C) on the minimum temperature of the climate and the annual precipitation rate. These requirements are necessary for surface disposal because frozen or flooded conditions will interfere with disposal of the treated effluent.

Design requirements have been added in subsection (D) to ensure that the treated wastewater is dispersed properly to ensure maximum seepage into the ground and to prevent run-off.

A general statement on the installation requirements has been added in subsection (E) to serve as a reminder for the reader. Operation and maintenance requirements have been added in subsection (F) to protect public health.

R18-9-E322. 4.22 General Permit: Subsurface Drip Irrigation Disposal, Less Than 3000 Gallons Per Day Design Flow

In addition to editorial or conforming changes, this rulemaking makes several changes to this Section. For emphasis, a statement has been added in subsection (A) that a 4.22 General Permit includes a pressure distribution system under R18-9-E304. This requirement is specified in the current subsection (A)(1), but is useful to explicitly state it in the introductory language.

The performance criteria specified in subsections (B)(1)(a) and (b) have been revised as a result of new information about component capabilities with different wastewater treatment performance. This rulemaking consolidates the requirements relating to evapotranspiration with deletions in subsections (B)(2)(b), (C)(4) and (D)(10), and the addition of calculation requirements in (C)(3). This provides a clear foundation to demonstrate compliance with design requirements.

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A requirement has been added in subsection (D)(1) that the design for pressure distribution systems in R18-9-E304 be followed except that quick disconnects are not required and the reserve volume may be provided in an oversized treatment tank or supplemental storage tank. Other design requirements has been added to subsection (D) that address ponding of wastewater, use of manufacturer's recommendations to protect the components of the drip irrigation system, prohibition of use for irrigating food crops, and others. Several of these added design requirements are explained in more detail in the following paragraphs.

Subsection (D)(5) incorporates by reference two technical standards by ASTM for plastic pipe. Several design requirements for driplines and emitters has been added in subsections (D)(8) and (9), respectively. One commenter suggested that subsection (D)(8)(a) should allow placement of driplines at greater than 24 inches apart on a difficult site as long as not more than 2 square feet of disposal area per lineal foot of dripline is used in disposal area calculation. This change was not incorporated because the approach can be used under the alternative features process in R18-9-A312(G).

A commenter identified confusion caused by the omission of some soil classifications in subsection (D)(11) while they are included in subsection (A)(3). The Department agrees and has added subsection (D)(11)(c).

A requirement has been added to follow manufacturer's recommendations to protect against freezing in subsection (D)(13), design requirements for shaded trench design in subsection (D)(14), and specifications for calculating the soil absorption area for a drip irrigation disposal works in subsection (D)(15). These three provisions were included in response to stakeholder feedback.

A commenter recommended that shaded trench construction be limited to only a 4-inch wide trench with a single dripline, using native soil backfill that is screened for rock greater than 1/2-inch. Because subsection (D)(14) is intended for a different configuration, this rulemaking adds a subsection (D)(8)(h) that ensures protection of the dripline and uniform wastewater distribution.

This rulemaking revises or adds installation requirements in subsection (E) and operation and maintenance requirements in subsection (F) in response to stakeholder feedback.

R18-9-E323. 4.23 General Permit: 3000 to Less Than 24,000 Gallons Per Day Design Flow

In addition to editorial or conforming changes to this Section, a sentence has been added to the introductory language in subsection (A) to emphasize that this general permit also applies to a property or adjacent properties under common ownership with more than one on-site wastewater treatment facility with an accumulative design flow from 3000 to 24,000 gallons per day. This language is necessary to prevent "piecemealing" by an applicant of a large-flow facility allowed under this general permit into units less than 3000 gallons per day. This has been done by applicants to avoid requirements such as design by a registered professional engineer or submittal of a performance assurance plan to avoid controlling the discharge of total nitrogen.

As mentioned, this rulemaking adds a nitrogen control requirement (subsection (A)(4)) to limit the discharge of nitrogen from on-site wastewater treatment works in this flow category. On-site wastewater treatment facilities with flows from 3000 to 24,000 gallons significantly increase the threat of groundwater contamination by nitrate due to their concentrated flows. This provision requires the facility to either meet a nitrogen loading limit in terms of pounds of total nitrogen per acre per day over the property served by the facility (the proposed limit is 0.088 pounds of total nitrogen per acre per day) or justify a greater nitrogen loading that is equally protective of aquifer water quality. Several technologies described in the 4.03 through 4.22 General Permits are capable of nitrogen removal and may be employed by the applicant to meet the nitrogen loading limit. The rule states that for the nitrogen loading calculation, the applicant may assume that 0.0333 pounds of total nitrogen per day per person is contributed to raw sewage. The nitrogen loading limit of 0.088 pounds per day per acre thus corresponds to sewage generation from about 2.6 persons per acre.

To remind the applicant of the other requirements, this rulemaking adds subsections (C), (D) and (E) that address design, installation and operation and maintenance requirements, respectively.

A new subsection (H) has been added to specify requirements for when a covered facility may expand. Similar to the requirements in the opening sentence in subsection (A), these provisions ensure that facilities are adequately designed and operated to accommodate increased flows due to the expansion. If the expansion raises the accumulative flow to 24,000 or more gallons per day, then this general permit no longer applies and the permittee must apply for an individual APP.

Table 1. Unit Design Flows

Table 1 has been changed to conform to changes made to other parts of the Chapter, including R18-9-101. The word "daily" has been deleted from the title of Table 1 because the third column specifies that the design flow is in "gallons per day" and therefore the word "daily" is not necessary. The first column title has been revised from "type of facility served" to "wastewater source." The factors for "apartment building" and "residence" have been moved to the "dwelling" category. A factor for a fire station has been added because no other design flow factor applies. This rulemaking includes a factor of 45 gallons per day per employee. This rulemaking adds the words "temporary use" after "park" to emphasize that these design flows are not for a long-term residential situation. The design flows under "dwelling" must be used when the use is not temporary. Under the dwelling category for determining design flow for

sewage treatment facilities and sewage collections systems, this rulemaking reduces the design flow per person from 100 to 80 gallons per day.

ARTICLE 4. NITROGEN MANAGEMENT GENERAL PERMITS

The heading of the Article has been revised to address nitrogen discharge issues.

R18-9-401. Definitions

This rulemaking applies the definitions of R18-9-101 to this Article, revises the definition of “application of nitrogen fertilizer,” amends the terms and definitions of “crop or plant needs” and “crop or plant uptake” to clarify that the requirements apply to plants other than crops and adds the following definitions that are applicable only to this Article: “impoundment,” “‘liner’ or ‘lining system,’” and “NRCS guidelines” (these terms are used in R18-9-403).

R18-9-402. Nitrogen Management General Permits: Nitrogen Fertilizers

In addition to editorial changes to this Section, this rulemaking revises the title of the Section to Nitrogen Management and replaces “crop plant” with “crop or plant.” The changes provide broader protection for application of fertilizer on plants that are not “crops.”

During the informal stakeholder process, a commenter suggested that the Department should initiate sampling studies, groundwater modeling, and credible and scientifically defensible methods of nitrogen tracking for these applications. In addition, a stakeholder suggested developing specific fertilizer application rates rather than just relying on the general best management practices. The management practices are guided by the “Best Management Practices Handbook for Regulated Agricultural Activities” (1988 BMP Handbook). Chapter 3 of the 1988 BMP Handbook and “Nitrogen Fertilizer Management in Arizona” published by the College of Agriculture at the University of Arizona in May 1991 provide specifics on application rates to prevent over-application of nitrogen.

R18-9-403. Nitrogen Management General Permits: Concentrated Animal Feeding Operations

In addition to editorial changes to this Section, this rulemaking changes the title of the Section to Nitrogen Management General Permit.

This rulemaking emphasizes liner performance for new process wastewater and contact stormwater impoundments at Concentrated Animal Feeding Operations (CAFOs). New subsection (A)(3) adds a new management practice for lining an impoundment if certain conditions are met and revises the management practice for closing an impoundment as specified in subsection (A)(4).

A new subsection (B) has been added that addresses lining requirements for impoundments. Subsection (B)(1) describes lining system requirements for new impoundments. A new impoundment is any impoundment constructed after the effective date of the rule. New impoundments must meet NRCS guidelines and also “acceptable liner performance criteria” defined as a coefficient of permeability of 1×10^{-7} centimeters per second or less. This rulemaking allows a reduction in the liner performance requirement as envisioned under the NRCS guidelines for impoundments that hold wastewater where manure is a significant component. The reduction is assumed due to the likelihood that the manure will “seal” the lining system. If there will be no manure in the impoundment, then the reduction in the liner performance requirement will not apply.

Subsection (B)(2) describes requirements for impoundments already in use – those that were constructed before the effective date of this rule. Currently, CAFO owners or operators must comply with the management practices that include the requirements in the 1988 BMP Handbook. Consistent with the 1988 BMP Handbook, subsection (B)(2) includes a process for the owner or operator to “reassess” whether the current lining system is adequate for the impoundment. The Department will evaluate various pieces of information such as whether the impoundment is located within a designated Nitrogen Management Area. If the Department determines that any of the factors listed in subsection (B)(2)(b) exist, the Department will require the owner or operator to reassess the lining system according to NRCS guidelines and to submit a report to the Department to demonstrate consistency with the NRCS guidelines. This rulemaking requires the owner or operator to perform the reassessment or submit plans to upgrade the lining system of the impoundment within 90 days. An extension for submittal of the plans can be approved by the Department if the owner or operator needs additional time to obtain financial or technical assistance in their development. After the permittee submits the report, the Department will make a preliminary decision on whether the impoundment liner must be upgraded to meet NRCS guidelines and the acceptable liner performance criteria specified in subsection (B)(1)(b). The process includes an opportunity for the owner or operator to comment on the preliminary decision before the Department makes a final determination.

A new subsection (B)(3) has been added to require that the owner or operator notify the Department when the impoundment is lined. To reduce reporting requirements, the permittee may submit the information in the annual report for the AZPDES CAFO General Permit, if the CAFO is covered under that general permit.

R18-9-404. Revocation of Coverage Under a General Permit

This rulemaking adds this Section based on the requirements in R18-9-A307 to provide an explicit process for general permits under Article 4.

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7. **A reference to any study relevant to the rule that the agency reviewed and either relied on in its evaluation of or justification for the rule or did not rely on in its evaluation of or justification for the rule, where the public may obtain or review each study, all data underlying each study, and any analysis of each study and other supporting material:**

“Comparison of the Effectiveness of Trenches and Seepage Pits for Treatment of Septic Tank Effluent in Arizona,” University of Arizona, June 2003.

“Pollutant Loads from Plumbing Fixtures and Pretreatment to Control Soil Clogging” by R. Laac, Ph.D., P.E., June 22, 1974.

8. **A showing of good cause why the rule is necessary to promote a statewide interest if the rule will diminish a previous grant of authority of a political subdivision of this state:**

Not applicable

9. **The summary of the economic, small business, and consumer impact:**

The majority of changes covered by this rulemaking are editorial or conforming and have limited impact. The preliminary economic impact of this rulemaking is determined based on four major areas:

1. Changes to individual permitting process requirements in Articles 1 and 2,
2. Changes that address nitrogen management in Articles 3 and 4,
3. Expansion of the Presale Inspection Program in R18-9-A316,
4. Changes to General Permits in Article 3:
 - Parts A and E for On-site Wastewater Treatment Facilities (excluding R18-9-E301);
 - Sewage Collection Systems General Permits;
 - Parts B, C, and D (excluding R18-9-B301(J) and (K), and R18-9-C305)

Based on the summary provided below, the Department estimates the minor economic impact of this rulemaking is outweighed by the overall public benefits.

CHANGES TO INDIVIDUAL PERMITTING PROCESS IN ARTICLES 1 AND 2

The Department estimates that the majority of changes to 18 A.A.C. 9, Articles 1 and 2 will not have an economic impact. The following changes overall will have a minor to moderate impact for a certain percentage of permittees:

R18-9-101(28). Prohibition for HOAs as permittees addressed in the definition of “person” at R18-9-101(28). There could be a minor impact on developers who no longer will transfer the sewage treatment facility to the homeowner’s associations. In contrast, homeowners should benefit due to reduced liability. The Department will benefit from having permittees that have demonstrated the financial and technical capability to operate and maintain the sewage treatment facility. This change applies to individual APP applications for sewage treatment facilities submitted after the effective date of the rule, which is a very small percentage of new permits, but will benefit the public and the environment by assuring that sewage treatment facilities are properly operated and maintained.

R18-9-A202(A)(8)(b)(viii). Modeling to show that discharge will not cause migration of a contaminated plume was added to R18-9-A202(A)(8)(b)(viii). This requirement will impact a small number of facilities that recharge reclaimed water in areas of contaminated groundwater plumes. Groundwater flow modeling required to demonstrate the potential impacts of the recharge project will be consistent with modeling normally performed as part of the hydrogeologic study for the project. Therefore, the Department expects little impact from this rule change.

R18-9-A203(C)(1). Revisions to self-assurance demonstration under R18-9-A203(C)(1). A small percentage of applicants may no longer qualify to use this mechanism for the financial demonstration for closure. Revised provisions provide more clarity regarding the financial status of applicants that may apply under this mechanism. For those that qualify, subsection (C)(1)(c)(ii) requires the applicant to submit a statement from an independent CPA to verify that the summary of financial conditions included in the letter from the company CFO matches the information in the company’s annual financial report. The changes will reduce the time required to review these self-assurance demonstrations than under the current rule. The applicants that will apply for this financial mechanism will be only those applicants who can make the appropriate financial demonstration in subsection (C)(1). Additionally, there will be reduced Department review for applicants that select this mechanism because the independent CPA will perform the financial evaluation. Therefore, the cost of the CPA statement for the majority of applicants that may select this option is expected to be offset by the reduction in Department staff review time.

R18-9-A203(F). A basic concept of the permitting program is that an applicant demonstrates and maintains the financial capability to construct, operate, maintain and then close a discharging facility consistent with BADCT and to ensure that AWQS are met. Individual APPs are issued for the life of the facility/operation which, in many cases, may be 30-50 years. A financial demonstration becomes obsolete very quickly. At closure time, the estimates for closure submitted with the permit application will be extremely out-of-date and the permittee may no longer be financially capable of closing the facility. Although the Department can require a permittee to submit an updated financial demonstration at any time if there is reason to suspect that financial capability is not maintained, this is rarely done.

Since APP does not renew permits on a regular schedule, there is a need to establish a process to revisit financial capability. This should have little impact on applicants who are required to make similar demonstrations under other

permitting programs. The Department considered establishing regular review periods but decided this may not be feasible based on current workloads. Instead, the Department will require the permittee to submit an updated financial demonstration with any request for a significant amendment to the permit. The permittee may choose to update the financial demonstration at any time, but the Department will require an update when a request for a significant amendment is submitted. In addition to Department review time, the permittee will bear the cost of preparing a financial demonstration for all facilities already covered by the permit as well as any new facilities that may be added by the amendment request. Depending on the financial mechanism and the time since the last demonstration, a confirmatory letter from the relevant financial institution may be all that is required. Any additional costs will have a minor increase in the cost to prepare and review the significant amendment. For those significant applications that are for complex modifications for the permitted facility, this will not be a new requirement. For the remainder of the permittees, this additional cost is small when compared to the public's potential liability if a permittee's financial condition has negatively changed so that the closure costs are no longer covered.

R18-9-A213(A)(6). A basic tenet of the APP program is the requirement to employ technology to reduce or eliminate the discharge of pollutants. Once permitted, the BADCT of a discharging facility is only revisited if there is evidence of groundwater quality impact. However, for facilities that have not been constructed, improvements in treatment technology could have occurred since permit issuance. R18-9-A213(A)(6) has been added to recognize that technological advances in treatment may warrant upgrades in BADCT for these facilities. This will have a minor impact overall; few facilities will have their permit suspended or revoked because in most cases, the provision is optional. The Department will only use this for situations when a facility has not been constructed within 5 years, an upgrade to BADCT is necessary, and the permit has not been amended for that purpose. If an upgrade of BADCT is required for a facility that has not been constructed, then the costs to the permittee will include the cost to prepare the application for permit amendment, to redesign the facility to meet new BADCT and the cost of Department review and processing of the amendment application. The benefit will be ensuring that facilities are constructed according to the law. Before arriving at the decision to suspend or revoke a permit, the Department will follow the process in R18-9-A213, which provides an opportunity for the permittee to explain why BADCT does not need to be updated.

R18-9-B203(E). This provision requires that the applicant submit a signed, sealed, and dated Engineer's Certificate of Completion (ECOC) to confirm that construction was completed according to Department-approved design report or plans and specifications. There should be no additional cost associated with the ECOC on the final construction of a sewage treatment facility because the ECOC should be provided as part of the normal practice of a professional engineer.

R18-9-B205(2). This provision increases the cost ceiling of BADCT alternatives that must be considered when an existing facility is expanded. This rulemaking increases the cost ceiling factor from \$0.05 per gallon of design flow to \$1.00 per gallon of design flow. The Department realized that the \$0.05 factor was extremely low, which, from a practical standpoint, will not result in any improvement in the treatment technology employed to improve the quality of the wastewater discharge. In determining the appropriate value, the Department looked at the cost to construct a new facility. Estimates show that figure to be between \$4 and \$13 per gallon of design flow. A \$1.00 factor is less than 25 percent of the cost to construct a new facility based on \$4/gallon of design flow. Most new construction will cost somewhere in the middle of the range. This is a ceiling and the permittee must review options that fall at or below the \$1.00 factor. It is not a requirement to spend that much money. Instead, the applicant must implement the option that is most protective of water quality below that ceiling cost.

CHANGES TO GENERAL PERMITS IN ARTICLE 3

Parts A and E – On-site Wastewater Treatment Facilities (excluding R18-9-E301)

R18-9-A309(A)(5). This subsection requires certain new or proposed replacement on-site wastewater treatment facilities to connect to a sewer if one is available. The current provision requires hookup if the distance to connect to the sewer is 400 feet or less and the hookup cost is \$6000 or less. The new provision requires hookup if a sewer line is available at the property boundary and: 1) the service connection fee is not more than \$6000 or \$10 times the daily design flow of the system in gallons and 2) the cost of constructing the connection to the sewer is less than \$3000 or \$5 times the daily design flow in gallons. In the 2001 rule, the monetary criteria used to determine sewer hookup were the same for both small household systems and large on-site wastewater treatment facilities, such as those serving RV parks or campgrounds. Thus, large-volume dischargers, which are the ones more likely to cause groundwater contamination, avoided hookup because the monetary criteria, which were developed for household systems, were so low. In this rulemaking, the monetary criteria increase proportionately as discharge volume increases. Therefore, certain large on-site systems that avoided connection to a sewer in the past may now have to hook up.

R18-9-A309, R18-9-A310, R18-9-A311, R18-9-A312, and R18-9-A314. There are a variety of changes in these Sections that may affect the installation or operation costs of an on-site wastewater treatment facility. Overall, the changes benefit the applicant. Some changes may add some cost, but others provide a direct economic benefit through reduced design and construction costs or long-term operational costs. All changes provide protection of water quality, and while some of the changes will increase up-front costs, cost over the lifetime of the system will actually be reduced because operational life of the system will be extended. The following summarizes the cost impact of these changes:

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R18-9-A309(B)(2)(b)(ii): Site plan only needs to extend outward 200 feet from the on-site wastewater treatment facility, not 200 feet outward from the property boundary. For large sites, this will slightly reduce the cost of preparing the application.

R18-9-A310: Separation of site investigations into surface and subsurface components may help streamline site investigation process and save applicants some money. The requirement to select at least two percolation test locations in the primary area and one location in the reserve area may add the cost of one percolation test to the total cost of the system. On the other hand, the additional percolation test in the primary area will help to ensure that the system does not fail after construction due to insufficient soil characterization.

R18-9-A311(C): Changes to this provision allow the possibility of installation of a conventional system, with acceptable engineering changes to overcome site limitations, in more situations than in current rule. For those sites that can qualify under the new criteria, savings could be considerable if a conventional system can be installed instead of an alternative system.

R18-9-A312(D)(2): Changes to this provision, with collateral changes in R18-9-E302, will greatly reduce the cost of a large number of conventional septic tank systems in Arizona. This provision eliminates the distinction between shallow and deep trench systems and assigns the soil absorption rate that is currently used for shallow trench systems to all trenches. This will reduce the length of trenches for many systems in the state, thereby reducing material and construction costs for those systems. The cost savings to homeowners due to these changes is substantial and is described more fully in R18-9-E302.

R18-9-A312(D)(3): The revised formula, which gives greater credit to better performing systems, will reduce disposal field size for many alternative systems, thereby reducing materials and construction costs.

R18-9-A314(E)(4): This provision requires that a field watertightness test be conducted for all septic tank installations. If water is available at the site, which will be the case in the large majority of installations, added materials and labor costs will be an estimated \$15 to \$68. For the sites where water must be delivered, the estimated cost, including site labor for initial tank fill and refill after a 24-hour presoak, is \$214. The field water tightness test has significant benefit in ensuring that the septic tank does not leak due to factory defects or damage during installation. In addition, the weight of water in the septic tank during testing ensures that the tank is properly bedded, reducing the chance of major malfunction of the tank upon use by the homeowner.

R18-9-A316. Changes to this Section expand the presale inspection program for on-site wastewater treatment facilities. Currently, an inspection is required of an on-site system at the time of property transfer only for those systems constructed on or after January 1, 2001. As the table in the next Section indicates, this encompasses over 40,000 systems to date. The Department estimates that about 400,000 conventional and alternative systems constructed before January 1, 2001 currently provide wastewater treatment to properties in Arizona. The Arizona Association of Realtors® estimates that on average, a property will transfer once every five years. Therefore, about 80,000 property transfers will occur annually in Arizona requiring an inspection of the on-site wastewater treatment facility. The current real estate contract developed by the Arizona Association of Realtors®, which is used for a large number of house sales in Arizona, requires inspection of the on-site system. The provisions of R18-9-A316 will ensure that the inspection and septic tank pumping is performed uniformly throughout the state. This inspection will increase maintenance and prolong the life of the system, thus providing significant benefit to homeowners purchasing properties.

Starting July 1, 2006, R18-9-A316 requires the owners of properties with an on-site wastewater treatment facility constructed before January 1, 2001 to hire a qualified person to inspect the on-site wastewater treatment facility before the property is transferred. The Department estimates that the cost for an inspection may range between \$200 and \$400, which will be added into the transaction cost during the sale of the home. This would include the cost of pumping the septic tank, which is critical to ensuring the long-term usefulness of the septic tank and disposal field system. In addition, the transfer inspection will benefit the buyer of the home because the inspection should identify any previously unseen deficiencies that would be addressed as part of the disclosure process between buyer and seller. Repairs to systems arising from the inspection will not only prolong the life of the system and eliminate possible future replacement costs, but ensure that the system will continue to protect public health and water quality. It is hard to estimate the cost impact of the requirement accurately, because many inspections are being performed currently to meet the inspection provision of the real estate contract. However, these inspections have been inconsistently performed throughout the state. Inspection reports indicate that some inspectors are performing inadequate inspections. The Department has received complaints which indicate that other inspectors are overcharging or performing unnecessary work. Although the cost of inspection is expected to be somewhat more in most cases, the homeowner will benefit from the consistency of the inspection, identification of needed repairs, and pumping of the septic tank. The prolonged life of the system far outweighs the costs.

This provision requires notification of the inspection to the Department. This will allow maintenance of accurate records of the ownership of these general permitted facilities and, based on the data received, allow development of better outreach and compliance assistance programs for property owners to ensure proper operation of the facility. In the end, the inspection requirement will increase the viable life of the facility and serve to protect public health and water quality.

In addition, this change provides a benefit to those who qualify as an inspector and to the entities that provide the certification program.

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R18-9-A317. This Section provides a mechanism for the Department to better address groundwater contamination by nitrate from non-point sources, such as on-site wastewater treatment facilities and concentrated animal feeding operations (CAFOs), through the establishment of Nitrogen Management Areas. Provisions in this Section allow the Department and local authorities to manage, reduce or eliminate nitrogen pollution impacts to groundwater. As mentioned earlier in this Preamble, nitrate is the most widespread groundwater contaminant in Arizona, and nitrogen sources threaten to pollute groundwater with nitrate. The cost of addressing nitrate contamination in groundwater used as a drinking water source is extremely high for many reasons, including the cost to search for another source of drinking water or to drill a deeper well. For some municipalities, the cost to drill a viable deep well and connect it to the drinking water system exceeds \$1,000,000. Prevention is the most economical solution for managing the discharge of nitrogen pollution. In addition, instead of imposing nitrogen reduction requirements on all potential sources throughout the state, this rulemaking provides a targeted approach to prevent impact or further degradation in those areas where the problem exists. The targeted approach significantly limits the economic impact of the rule.

This rulemaking contains new provisions as well as changes to existing provisions intended to reduce or eliminate sources of nitrogen pollution to groundwater including designating Nitrogen Management Areas under R18-9-A317 and requirements that determine when new facilities must be designed to denitrify.

The process for designating nitrogen management areas will have an impact on Department staff who will be responsible for:

- Evaluating data to determine preliminary designations,
- Notifying local authorities of preliminary designations and responding to comments from local authorities, and
- Developing final nitrogen management areas and maintaining such information in Department records and on the Department web site.

The designation process will have an impact on local authorities who will be responsible for reviewing preliminary designations and providing comments to the Department. Local authorities may choose to facilitate a public participation process that may add additional costs for public forums and recordkeeping.

Once a final nitrogen management area is designated, then conditions of the Nitrogen Management Area designation will primarily impact proposed on-site wastewater treatment facilities and CAFOs.

The Nitrogen Management Area designation process is a necessary and appropriate means to control sources of nitrate contamination and any increase in cost is reasonable compared to costs for securing a new source of drinking water for a community or cleaning up contaminated groundwater.

To determine the potential impact on individual on-site wastewater treatment facilities, the Department evaluated the number of licenses that were issued between January 2001 and December 2004 in Arizona. A summary of the figures is in the following table.

Type 4 APP General Permit Licenses for On-site Wastewater Treatment Facilities issued between January 2001 through December 2004 (ADEQ and all Counties)						
On-site General Permit Number		2001	2002	2003	2004	Total
On-site Systems Less Than 3,000 gpd						
Conventional (4.02 only)		10353	11543	10571	11875	44342
Alternative (4.02 - 4.22 in combination)		643	675	440	319	2157
SUBTOTAL ON-SITE SYSTEMS (<3,000 gpd)		10996	12218	11011	12274	46499
On-site Systems 3,000 to less than 24,000 gpd						
Conventional (4.02 only)		N/A	N/A	13	5	18
Alternative (4.23 for 4.02 - 4.22 in combination)		18	12	6	2	38
TOTAL ON-SITE SYSTEMS		11014	12230	11030	12281	46555
% of Total Systems that are Alternative Systems		6.0%	5.62%	4.04%	2.61%	4.71%
Summary of General Permit Technologies Used for Verified Alternative On-site Systems						
		2001	2002	2003	2004	Total
4.02	Septic Tank USED WITH OTHER GPs	N/A	N/A	400	247	647
4.03	Composting toilet	10	7	12	10	39
4.04	Pressure distribution system	26	31	118	135	310

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4.05	Gravelless trench	57	0	6	1	64
4.06	Natural seal ET bed	5	2	4	0	11
4.07	Lined ET bed	14	9	12	5	40
4.08	Wisconsin mound	21	41	32	27	121
4.09	Engineered pad system	346	247	124	106	823
4.10	Intermittent sand filter	6	12	8	6	32
4.11	Peat filter	9	9	22	21	61
4.12	Textile filter	31	107	81	43	262
4.13	RUCK® system	1	6	0	2	9
4.14	Sewage vault	7	13	8	19	47
4.15	Aerobic, subsurface disposal	55	107	93	74	329
4.16	Aerobic, surface disposal	3	2	3	15	23
4.17	Cap system	1	1	3	12	17
4.18	Constructed wetlands	11	13	16	18	58
4.19	Sand lined trench	0	6	3	13	22
4.20	Disinfection devices	13	26	115	101	255
4.21	Sequencing batch reactor	4	1	0	4	9
4.22	Subsurface drip irrigation	23	35	137	99	294
TOTAL TYPE 4 TECHNOLOGIES UTILIZED		643	675	1197	958	3473
N/A = not available.						
Note: The total number of alternative on-site systems installed for 2001 and 2002 listed in the top part of this table is greater than the actual number of systems installed in those years because each general permit used in the design for an on-site wastewater treatment facility was counted as a separate system. If, for example, a facility design included three general permits, the number of on-site facilities reported to the Department was three instead of one. Starting in 2003, the method for tracking approvals was modified so that the total number of alternative systems was tracked, as was each specific component technology approved under a 4.02 through 4.22 General Permit.						

Less than 5 percent of the on-site wastewater treatment facilities approved since January 2001 include some type of alternative treatment or disposal feature to configure a viable facility. The nitrogen management components of this rulemaking have the potential to increase the number of on-site wastewater treatment facilities that will need denitrifying capabilities or require hook-up to a centralized sewage treatment facility.

In Arizona, on-site wastewater treatment facilities provide sewage treatment and disposal to an estimated 400,000 or more households, or almost 20 percent of the state's population. As shown in the above table, more than 11,000 new on-site systems a year are being approved annually under the Department's current APP rules. An on-site wastewater treatment facility poses a threat to public health and water quality if it not designed, constructed, and operated properly. Dense concentrations of on-site wastewater treatment systems have caused and threaten to cause nitrate contamination of groundwater at many localities throughout Arizona. For this reason, a variety of changes to the on-site wastewater treatment facility provisions in this rulemaking are specifically intended to enhance protection of public health and water quality by preventing or mitigating the potential for nitrate contamination of groundwater. To anticipate the need for on-site system technologies that can reduce nitrogen loading to groundwater, this rule adds a new general permit at R18-9-E316 for a nitrate-reactive media filter that is highly effective in removing nitrogen and more cost effective than some other nitrogen removal technologies. For an owner or operator of a CAFO, the current rules require the owner or operator to comply with agricultural best management practices to minimize the discharge of nitrogen pollutants from harvesting, stockpiling, and disposing of animal manure and from controlling and disposing of contaminated water resulting from CAFO activities. This rulemaking, through the nitrogen management area mechanism established in R18-9-A317(D)(2) and the changes to R18-9-403, emphasizes liner performance for manure and process wastewater impoundments and updates the rule by incorporating the latest Natural Resources Conservation Service (NRCS) guidelines.

R18-9-E302. This Section contains the most important changes in the proposed rulemaking affecting cost of design and construction of conventional on-site wastewater treatment facilities, changes that will significantly reduce the cost of a large majority of conventional systems constructed in Arizona. As the table above indicates, more than 95 percent of the systems constructed annually (11,000 systems) are conventional systems. A large percentage of these consist of a septic tank conveying wastewater to a trench disposal field. This rule eliminates the distinction between

deep and shallow trenches (i.e., does not penalize the design of a deep trench) to conform with the corresponding change to R18-9-A312(D)(2). In addition, this rule, at R18-9-E302(C)(2)(a), increases the maximum absorption area for sidewalls up to 48 inches. With changes to the table at R18-9-E302(C)(2)(c), row 4, this rule now allows up to 11 square feet of trench absorption area per linear foot of trench. The increase in allowable absorption area per linear foot of trench of 11 square feet is significant compared to 7 square feet (interpreted one way under the current rule) or 9 square feet (as interpreted in a clarification of the rule issued by the Department on March 9, 2001). Trench length is thus reduced up to 18-36 percent, with roughly comparable savings in the cost of materials and construction for the disposal field. Since the cost of the disposal field is about 1/2 the cost of the system (the other half being the cost of the septic tank and its installation), this rule change significantly reduces the cost of the total system for up to about 11,000 systems per year.

R18-9-E303 through R18-9-E322. These Sections establish the 4.03 through 4.22 General Permits, which provide performance, design, installation, operation, and maintenance requirements for alternative treatment and disposal technologies. Alternative treatment and disposal technologies are employed if a conventional septic tank/disposal field system cannot be installed at a site. Because alternative system technologies are needed for less than 5 percent of the 11,600+ on-site systems installed each year, the overall impact of changes to these provisions is small. The changes to these general permits are mostly technical in nature and often were made to provide consistency among several of the general permits. As such, installation costs might increase slightly for some general permits and decrease slightly for others. For the following three general permits, the changes in this rulemaking were not entirely technical and merit short explanations.

The 4.03 General Permit covers composting toilets. The Department made changes to consolidate the permitting process for all wastewater flows at a site using a composting toilet into this single general permit. Previously, non-toilet flows were covered under other general permits. Although some of the technical changes made to this general permit may increase construction costs, they will likely be offset by reduced permitting costs because only one Notice of Intent to Discharge must now be submitted.

The 4.15 General Permit, by adding a new treatment performance category, expands the number of aerobic treatment products that may be used. The new products this general permit now allows are likely to be useful in repairing or prolonging the life of existing systems. Under the 2001 rule, the only option is often construction of an entirely new, more costly facility.

The 4.16 General Permit covers a new technology for nitrogen control. It will provide another, potentially very cost-effective, option for properties requiring control of nitrogen to prevent or mitigate contaminated groundwater.

R18-9-E323. The changes to this rule at subsection (A) and (H) will eliminate any perceived loop-hole for properties where the total wastewater design is greater than 24,000 gpd. A property with a total design flow of greater than 24,000 gpd must be covered by an individual APP to ensure that groundwater quality is adequately protected when wastewater flow volume is high. In several cases, applicants have submitted applications for general permit coverage in a piecemeal fashion, where each project was submitted with a design flow of less than 24,000 gpd, in an attempt to circumvent the requirement to apply for an individual APP. Because the intent of the current rule is to require an individual APP once total wastewater design flow exceeds 24,000 gpd for a property, these changes will have no impact. The new language at subsection (A)(4) to require evaluation of nitrogen loading will have an impact for facilities that cannot achieve a nitrogen loading rate that will protect groundwater quality. In this type of situation, the applicant may elect to use a larger disposal area to disperse the nitrogen load or a treatment technology that reduces nitrogen levels in the wastewater. Either of these may increase the cost. However, the increase in cost is offset by the benefits of protecting groundwater for drinking water use.

Based on the reality that more than 95 percent of the applicants for on-site wastewater treatment facilities are for conventional septic tank and disposal field systems covered solely under R18-9-E302, overall, the changes described above to R18-9-E303, R18-9-E308, R18-9-E310, R18-9-E314, R18-9-E315, R18-9-E316, R18-9-E320, and R18-9-E323 apply only to a very small percentage of applicants who find it necessary to install an alternative on-site wastewater treatment facility or conventional system under R18-9-E323 greater than 3000 gallons per day.

Sewage Collection System General Permits

This rulemaking adds three new general permits for sewage collection systems at R18-9-B301(J), B301(K) and R18-9-C305 and modifies the general permit at R18-9-E301.

There is no permitting fee for coverage under a Type 1.10 or a 1.11 general permit.

The general permit under R18-9-C305 is a Type 2 general APP. Any discharge from a sewage collection system is subject to the APP requirements. Many operators of sewage collection systems will apply for coverage under this general permit to allow operation under a Capacity, Management, Operations and Maintenance (CMOM) Plan, although the conditions of this general permit require a significant investment in analysis, planning, and implementation. The CMOM approach is voluntary, but trades operator initiative in conducting a good program of operation and maintenance and developing a capital improvement program for undersized or otherwise inadequate infrastructure in exchange for Department discretion in its compliance approach to sewage releases. This general permit should benefit system operators, the environment and citizens of the state.

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The changes proposed to R18-9-E301 are intended to clarify the requirements and not to increase costs for a new or replaced sewage collection system. Some changes for lift stations will increase the cost, but are necessary to ensure long-term operational performance of the equipment.

Parts B, C, and D (excluding R18-9-B301(J) and (K) and R18-9-C305)

This rulemaking adds new general permits at R18-9-B301(L) and R18-9-C306. The changes in R18-9-D301 expand the applicability of the general permit by adding certain types of discharges that would have required an individual permit. The cost of applying for coverage under a general permit is significantly lower than for an individual permit.

General Impacts

Overall impacts may be felt by the Department and delegated authorities due to the need to update forms and web sites and to provide outreach efforts on the new rules to staff and the regulated community.

This rulemaking updates several technical standards that are incorporated by reference. The impact from these updates should primarily be the cost of purchasing the new standards, which will vary depending upon the number of standards desired. The overall cost is offset by the benefit of using up-to-date national standards.

Estimated Costs and Benefits to State Revenues.

R18-9-A316. Based on 400,000 on-site wastewater treatment systems constructed before January 2, 2001 and on the Arizona Association of Realtors® estimate that, on average, a property will be transferred once every five years or about 80,000 property transfers per year, the Department anticipates that \$4M will be collected annually and deposited in the Department's Fee Fund. However, the Department anticipates that the property transfer inspection program will be turned over to the 15 counties in two to three years after the July 1, 2006 effective date for inspections of all on-site systems. As the Department has stated at stakeholder meetings, the Department intends to delegate this program, including the electronic submittal of information, to the 15 counties once administrative processes and databases are running smoothly. This will allow on-site system and permittee data for the entire state to be contained in one standardized database, and allow the Department and delegated agencies to develop better outreach and compliance assistance programs.

The Department intends to use monies collected as a result of the fee to modify its current databases to accommodate the transfer of ownership information in one place (rather than many locations around the state). The Department also intends to develop on-line forms for simple submittal of the information, similar to the Smart Notice of Intent (Smart NOI) the Department developed for its stormwater permitting program. This should greatly facilitate the submittal process. In addition monies will be used to develop training materials and courses to help inspectors comply with the pre-sale inspection requirements of this Article.

Impact of Rules Affecting Small Businesses (A.R.S. § 41-1035.)

1. *Establish less stringent compliance or reporting requirements in the rule for small businesses.*

The majority of small businesses subject to this rulemaking will apply for a Type 4 General Permit. Type 4 General Permits are for the life of the facility and generally do not require reporting to the Department. For the remaining small businesses, if an applicant qualifies, the applicant now has an option to obtain a general permit instead of an individual permit. Reporting requirements for general permits are less stringent than those for individual permits.

2. *Establish less stringent schedules or deadlines in the rule for compliance or reporting requirements for small businesses.*

The Department has some flexibility in determining compliance deadlines and reporting schedules deadlines within an individual permit, if necessary. It is not possible, however, to employ less stringent compliance or reporting schedules or deadlines for small business because all discharging facility owners are required to have a permit.

3. *Consolidate or simplify the rule's compliance or reporting requirements for small businesses.*

Consolidation and simplification of the Aquifer Protection Permit process has been achieved for most, if not all, small business applicants with the development of the general permits. Most general permits require minimal monitoring requirements and no reporting requirements.

4. *Establish performance standards for small businesses to replace design or operational standards in the rule.*

Because of the importance of reducing impacts to groundwater, the Department currently maintains a performance-based approach to permitting. This rulemaking develops many general permits to provide an easy permitting process for an applicant that allows for the design and operation of facilities according to a standard design.

5. *Exempt small businesses from any or all requirements of the rule.*

It is neither legal nor feasible to exempt any discharging facility from the requirements of this rulemaking.

10. A description of the changes between the proposed rules, including supplemental notices, and final rules (if applicable):

The Department plans to update the fee rules in the near future and foresees that the rulemaking may change the structure of the Chapter. Therefore, any specific rule cited in this rulemaking under A.R.S. Title 18, Chapter 14 has been changed to broadly cite the entire Chapter in which fees are covered.

Rulemaking changes made as a result of responses to comments are described in item #11. Conforming, grammatical, formatting, and other minor changes have been made throughout the rule package by the Department and as suggested by the Governor's Regulatory Review Council (G.R.R.C.) staff and have not been addressed in items #10 or #11.

The language in R18-9-A205(C) has been revised. The Department does not believe that this change is substantive since it now mirrors the statutory requirements.

R18-9-A209(A) has been revised to allow the applicant to submit the site investigation plan to the Department for prior review before submitting the complete closure plan. The applicant will no longer have to wait for an approval of the site investigation plan before submitting the notification under A.R.S. § 49-252. The Department believes that this change does not constitute a substantive change, but rather, revises the closure plan approval process to conform to statute.

The language in R18-9-A314 has been revised to better convey that the requirements for the design, manufacturing, and installation of a septic tank are ultimately a component of the general permitting process in which the permittee, not the manufacturer, is the recipient of Construction and Discharge Authorizations issued by the Department.

R18-9-D303(E)(2) now specifies a 30-day time-frame for the required report. This revision reflects the Department's current procedures and does not represent a substantive change.

The Department revised other Sections as a result of G.R.R.C. staff review. Some of the more extensive revisions are within the following Sections: R18-9-A205(C), R18-9-A317(C), R18-9-B301(L), R18-9-403(B), and R18-9-404(B).

The following changes are the result of Department review and are addressed in this section for the benefit of the reader.

R18-9-A203. Financial Requirements

Proposed subsection (C)(1)(a) has been moved to subsection (C)(1)(c) and amended with revised cross-references and editorial changes as follows:

c. The applicant submits:

- i. A letter signed by the applicant's chief financial officer that identifies the criterion specified in subsection (C)(1)(a) or (b) or used by the applicant to satisfy the financial assurance requirements of this Section, an explanation of how the applicant meets the criterion, and certification of its accuracy, and*
- ii. A statement from an independent certified public accountant verifying that the demonstration submitted under subsection (C)(1)(c)(i) is accurate based on the review of the applicant's financial statement and no adjustment to the financial statement is necessary.*

Additional language was added to subsection (C)(1)(a)(iv) and (C)(1)(b)(iv) to make the requirements stand independently and to clarify that the applicant must satisfy only one of the financial demonstrations. Subsection (C)(1) has been revised as follows:

C. Financial assurance mechanisms. The applicant may use any of the following mechanisms to cover the financial assurance obligation under R18-9-A201(B)(5):

- 1. Financial test for self-assurance. If an applicant uses a financial test for self-assurance, the applicant shall not consolidate the financial statement with a parent or sibling company. The applicant shall make the demonstration in either subsection (C)(1)(a) or (b) and submit the information required in subsection (C)(1)(c):*

The phrase "except for (C)(1)(b)(iv) or (c)(iv)" has been deleted from subsection (8)(a)(iii). The language referenced by this citation has been moved to subsection (C)(1).

8. Guarantees.

a. The applicant may use guarantees to cover the financial assurance obligation under R18-9-A201(B)(5) if the following conditions are met:

- i. The applicant submits to the Department an affidavit certifying that the guarantee arrangement is valid under all applicable federal and state laws. If the applicant is a corporation, the applicant shall include a certified copy of the corporate resolution authorizing the corporation to enter into an agreement to guarantee the permittee's financial assurance obligation;*
- ii. The applicant submits to the Department documentation that explains the substantial business relationship between the guarantor and the permittee;*

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- iii. The applicant demonstrates that the guarantor meets conditions of the financial mechanism listed in subsections (C)(1). For purposes of applying the criteria in subsection (C)(1) to a guarantor, substitute "guarantor" for the term "applicant" as used in subsection (C)(1).

R18-9-A209. Temporary, Cessation, Closure, and Post-closure

The term "implemented" has been added to subsection (B)(3) to make it consistent with subsection (B)(2)(e) and to clarify that the Department cannot issue a clean closure approval until the plan is implemented.

- ~~2.3.~~ Within 60 days of receipt of a complete closure plan, the Department shall determine whether the closure plan achieves clean closure.
- a. If the implemented complete closure plan achieves clean closure, the Director shall:
- i. If the facility is not covered by an Aquifer Protection Permit, send the person a letter of approval to the permittee; or
- ii. If the facility is covered by an Aquifer Protection Permit, send the person a Permit Release Notice issued under subsection (C)(2)(c).
- b. If the implemented complete closure plan does did not achieve clean closure, the permittee person shall submit a post-closure plan under subsection (C) and the following documents within 90 days from the date on the Department's notice or as specified under A.R.S. § 49-252(E):
- i. An application for an individual permit, or
- ii. A request to modify amend a current individual permit to address closure activities and post-closure monitoring and maintenance at the facility.

R18-9-B204. Treatment Performance Requirements for a New Facility

The following typographical error has been corrected in subsection (B)(4)(b)(ii):

- ii. The single sample maximum concentration of fecal coliform organisms in a wastewater sample is not greater than 23 cfu/100 ml or the single sample maximum concentration of E. coli is not greater than 1523 15 cfu/100 ml;

R18-9-A312. Facility Design for Type 4 ON-site Wastewater Treatment Facilities

The table in subsection (E)(2) provides the "available vertical separation distance between the bottom of the disposal works and the seasonal high water table." When the Department changed the format and structure of this table, the second column was incorrectly labeled – duplicating the parameters of the first column. The Department believes that the reader will recognize that this is a typographical error and will not be affected by this change.

Total Coliform Concentration, 95th Percentile, Delivered to Natural Soil by the Disposal System (Log₁₀ of coliform concentration in cfu per 100 milliliters)	Minimum Vertical Separation (feet)	
	For SAR*, 0.20 to 0.63	For SAR*, 0.63+ to 1.20
8**	5	10
7	4	8
6	3.5	7
5	3	6
4	2.5	5
3	2	4
2	1.5	3
1	1	2
0***	0	0

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<u>Available Vertical Separation Distance Between the Bottom of The Disposal Works and the Seasonal High Water Table (feet)</u>		<u>Maximum Allowable Total Coliform Concentration, 95th Percentile, Delivered to Natural Soil by the Disposal Works (Log₁₀ of coliform concentration in cfu per 100 milliliters)</u>
<u>For SAR*, 0.20 to 0.63</u>	<u>For SAR*, 0.63+ to 1.20</u>	
<u>5</u>	<u>10</u>	<u>8**</u>
<u>4</u>	<u>8</u>	<u>7</u>
<u>3.5</u>	<u>7</u>	<u>6</u>
<u>3</u>	<u>6</u>	<u>5</u>
<u>2.5</u>	<u>5</u>	<u>4</u>
<u>2</u>	<u>4</u>	<u>3</u>
<u>1.5</u>	<u>3</u>	<u>2</u>
<u>1</u>	<u>2</u>	<u>1</u>
<u>0</u>	<u>0</u>	<u>0***</u>

* Soil absorption rate from percolation testing or soil characterization, in gallons per square foot per day.

** Nominal value for a standard septic tank and disposal field (10⁸ colony forming units per 100 ml).

*** Nominally free of coliform bacteria.

R18-9-403. Nitrogen Management General Permits: Concentrated Animal Feeding Operations

The phrase “to the Department” has been added to subsection (B)(2)(c) as follows:

- c. The owner or operator shall, within 90 days of the Director’s notice, submit either:*
i. A report to the Department demonstrating consistency with NRCS guidelines and the acceptable liner performance criteria established in subsection (B)(1)(b); or

If a CAFO is not applying under the AZPDES general permit, it is necessary for the Department to obtain the information required in subsection (B)(3) annually. Therefore, subsection (B)(3) has been amended as follows:

- 3. Notification requirements. The owner or operator of any lined impoundment shall either:*
a. Notify the Department of the type of liner that was used to line each impoundment by February 19 of each year following either:
i. The first use of an impoundment not used before November 12, 2005; or
ii. Completion of a liner upgrade required under this Section for an impoundment used before November 12, 2005; or
b. Include the information required in subsections (B)(3)(a)(i) and (ii) in the next annual report submitted for the AZPDES Concentrated Animal Feeding Operation General Permit, issued under 18 A.A.C. 9, Article 9, Part C.

11. A summary of the comments made regarding the rule and the agency response to them:

All comments in this section are presented exactly as received. Additional language if any, has been placed outside the quotation marks of the commenters’ statements.

GENERAL COMMENTS

Commenter – Angie Garcia, AG Technical Services:

“I have found the rules to be incomplete as to where the information comes from. Information is repeated throughout the rule. It would make more sense to state the information once. For example, in R18-9-A301 specify what paper work needs to be submitted. R18-9-A310, specify everything related to site investigation. Place R18-9-A312(D) here, etc.

R18-9-A312, Everything related to designing the septic system place in this section. Take R18-9-A309(B) out and place in R18-9-A312, etc.

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In each of the sections be specific and contain information just for that purpose instead of having the same information repeat. Example,

R18-9-A302, all Department paperwork, including who can design a convention or alternative septic system, NOI, etc.

R18-9-A310, all soils information, including calling blue stake before digging hole

R18-9-A311, operation and maintenance information

R18-9-A312, septic system design, include on-site plan planning/zoning home setbacks.

In the general Type 4 permit sections, it would be helpful to have some reference design to look at for each design. Like we have for the Wisconsin Mound.”

Response: The Sections of the rule in Article 3, Part A (R18-9-A301, et seq.) do proceed in a logical progression. R18-9-A301 through A308 lay out the framework and provide general requirements for all APP general permits (Types 1, 2, 3, and 4 General Permits). Beginning with R18-9-A309, and through R18-9-A316, information specific to general permits for on-site wastewater treatment facilities is provided. It would be more confusing to place specific requirements for on-site wastewater treatment facilities, which are voluminous, into the general requirements applicable to all general permits. Such a modification would do more to hamper understanding of the general permit structure and procedures than help it.

With respect to the general permit provisions dealing with on-site wastewater treatment facilities, the progression is as follows:

R18-9-A309, General Provisions for On-site Wastewater Treatment Facilities.

R18-9-A310, Site Investigation for Type 4 On-site Wastewater Treatment Facilities. This is the first step in determining the type of system that is appropriate for installation on a property, thus it is logical that it comes after the general provisions in A309. In regard to the blue-staking comment, the Department does not agree that a blue staking provision should be added as a rule requirement. The site investigator should be aware of when it may be necessary to obtain assistance to mark utilities, but in most cases, on-site systems are installed on private property, which may fall outside any requirement to obtain utilities-marking assistance. In any case, utilities-marking requirements are found in Arizona Revised Statutes, Title 40, Chapter 1, Article 6.3, under jurisdiction of the Arizona Corporation Commission, not the Department.

R18-9-A311, Facility Selection for Type 4 On-site Wastewater Treatment Facilities. Once the site investigation is performed according to R18-9-A310, a specific type of on-site system technology can be selected. This Section describes that process. Therefore, logically and as represented in rule, this process follows the work described in R18-9-A310.

R18-9-A312, Facility Design for Type 4 On-site Wastewater Treatment Facilities. After a specific type of on-site system technology is selected under R18-9-A311, the detailed aspects of the design can be determined and that information must be submitted to the Department in a Notice of Intent to Discharge, which the Department then processes. Again, this phase logically follows the facility selection process described in R18-9-A311, both in fact and in rule.

R18-9-A313, Facility Installation, Operation, and Maintenance for On-site Wastewater Treatment Facilities. These steps logically follow the design of the facility as described in R18-9-A312. The commenter’s implied suggestion to place operation and maintenance information in R18-9-A311 actually would disrupt the rule’s logical progression by placing operation and maintenance a system in a section that precedes its design.

In summary, the Sections on on-site wastewater treatment facilities do follow a logical path. No change has been made to the rule.

Regarding the comment on reference designs, the Department agrees that it would be a benefit to have reference designs of the different on-site system technologies allowed under Type 4 General Permits. The Department will work to promote the development of reference designs.

Commenter – James Turner:

“On the current rules and on the draft revisions it is difficult to find where you are in the rules (for instance looking for a specific numbered rule) without flipping back or forward several pages. I suggest that a heading, similar to what is used in dictionaries, be included atop each page, which would facilitate locating where one is in the rules. Example R18-9-A312.C.2.”

Response: All agencies follow the requirements of the Arizona Administrative Procedure Act and the Office of the Secretary of State regarding the structure and formatting of agency rules. Current rules are published by the Office of the Secretary of State using a prescribed numbering system, form, and style. The Department drafts its proposed rules using these same rulemaking requirements. The only deviation made from these requirements is to single space the document to save paper. No change has been made to the rule.

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Commenter – Sydney Hay, Arizona Mining Association (AMA):

“**APP Boilerplate:** The main purpose of the APP rules should be to implement the statutory requirement that any person who owns or operates a facility that discharges (defined as adding pollutants directly to an aquifer or to the land surface or vadose zone in such a manner that there is a reasonable probability that the pollutant will reach an aquifer (see A.R.S. § 49-201(12))) must obtain an APP. The APP statute provides that ADEQ “shall prescribe by rule requirements for issuing, denying, suspending or modifying individual permits, including . . . conditions and requirements for individual permits.” A.R.S. § 49-242(A).

With respect to conditions that may be authorized in permits, such as APPs, Arizona’s administrative procedure act provides that ‘[a] general grant of authority in statute does not constitute a basis for imposing a licensing requirement or condition unless a rule is made pursuant to that general grant of authority that specifically authorizes the requirement or condition.’ A.R.S. § 41-1030(B). Notwithstanding this statutory obligation, ADEQ continues to impose APP conditions on permittees that are based on general grants of authority in the APP statute (see, e.g., A.R.S. § 49-243(K)(8)), but which do not have corresponding rule language authorizing such conditions. ADEQ’s typical response to requests by permittees to modify such provisions in individual permitting circumstances is that such terms constitute ‘non-negotiable’ boilerplate. In essence, this ‘non-negotiable’ boilerplate constitutes a ‘rule’ (defined as an agency statement of general applicability (see A.R.S. § 41-1001(17)) that has not gone through proper rulemaking procedures and has the effect of amending or repealing the actual APP rules.

This is a significant legal concern held by numerous stakeholders. AMA continues to request that ADEQ consider and respond specifically to the significant concerns that have been raised by numerous stakeholders with the current APP boilerplate language and with ADEQ’s position that the boilerplate is non-negotiable. AMA hopes these major concerns can be properly addressed by ADEQ, and that AMA will not be required to consider joining in a petition to ADEQ pursuant to A.R.S. § 41-1033(A) or in a declaratory judgment action with the Maricopa County superior court pursuant to A.R.S. § 41-1034(B) in an attempt to resolve the significant issues with ADEQ’s current APP boilerplate language.”

Response: The Department is committed to implement the APP program effectively and within the scope of its authority. A.R.S. § 49-203(A)(7) gives the Department the authority to impose permit conditions to carry out the permit program in addition to the authority to adopt rules for that purpose. Each section of the permit framework is referenced to statute or rule that authorizes the condition to achieve that program purpose. The Department remains willing to modify terms when appropriate under the circumstances and when allowed by law. The Department recently has revised, in consultation with stakeholders, certain standard APP terms, previously known as the “framework.” This new framework of standard APP terms will be used by permitting staff. Applicants or permittees can consult with permitting staff, and management as necessary, to suggest changes to the revised framework. Changes have been made throughout the rule that clarify the authority for permit conditions.

PREAMBLE COMMENTS

R18-9-106. Determination of Applicability

Commenter – Scott Thomas, ASARCO: (Subsection (E))

“The language in the preamble addressing proposed facilities that are not built (11 A.A.R. at 149) should be incorporated in some fashion in the rules. Otherwise, the language could be read to require an APP application even for a facility that will not be built.”

Response: The term “discharging” has been added to subsection (E) as follows:

E. If the Director determines that an operation or activity is subject to the requirements of A.R.S. §§ 49-241 through 49-252, the person who owns or operates the discharging facility shall, within 90 days from the date of the Director’s written notification, submit an application for an Aquifer Protection Permit or a closure plan.

R18-9-A211. Permit Amendments

Commenter – Dorothy O’Brien, City of Peoria: (Subsection (A)(3))

“Paragraph one adds the phrase ‘effective date of at amendment’ and makes any changes to permits effective the date of signature. We respectfully request that this language be modified to be ‘30 days after the date of the permit signature.’ This allows individuals who implement the permit to receive copies and modify sampling and action plans to meet the needs of the new permit.”

Response: The Preamble does not say that the permit is effective on the date of signature, but rather, that the amendment becomes effective on the date the old permit is superseded. If a permit decision is appealed, and revisions are required as a result of the appeal, the amendment is effective upon revision. No change has been made to the rule.

R18-9-A213. Permit Suspension, Revocation, Denial, or Termination

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Commenter – Dorothy O'Brien, City of Peoria:

"Paragraph two discusses the need to review BADCT if construction is not completed within five years of issuance. We understand the desire to ensure that permits are not issued and then placed on the shelf along with plant designs that are far into the future. However, plants under construction should not fall into the same category. Therefore, we request the language be amended to discuss plants that have not begun construction within five years of issuance of a permit."

Response: The Department will take into account all factors for the particular situation including stage of construction for the facility. If a substantial amount of construction has been completed this provision will not apply. No change has been made to the rule.

R18-9-A312. Facility Design for Type 4 On-site Wastewater Treatment Facilities

Commenter – Joelle Wirth: (Subsection (D)(3))

"Soil Application Rate (page 26 & 27) This section goes to great length to discuss how the agency has agreed to allow a designer a greater wastewater load in response to providing technologies that perform better than a conventional septic system. Once again the agency seems to foster a belief that the performance of these advanced systems is assured forever, and therefore shrinking down the disposal field should be considered as an economic advantage for the homeowner. Without on-going Operation and Maintenance of these advanced treatment systems, not only is the performance limited but reducing the disposal areas could actually shorten the life expediency of the system instead of increasing them. Another area worth noting is the systems as described in A312 (E)(3) that are dependant upon disinfection due to the probability of surfacing Again without O & M the probability that we are creating public health nuisances is greater. These systems should be required to have a mandatory third party O & M for the life of the system if only to ensure the presence of the permitted disinfecting agent or device is functioning."

Response: The rules require certification that a one-year service contract is in place prior to issuance of a Discharge Authorization for an alternative system. The requirement for a one-year service contract will ensure that the homeowner's system is working properly during startup and provide a period of familiarization with the system so that the homeowner can take over O&M responsibility after one year, or more likely, renew the service contract or change service companies. The Department is aware that some stakeholders support a requirement for a service contract for the life of the system at the time of system approval, but that approach will be impractical to implement. No change has been made to the rule.

R18-9-A312. Facility Design for Type 4 On-site Wastewater Treatment Facilities and

R18-9-E309. 4.08 General Permit: Wisconsin Mound, Less Than 3000 Gallons Per Day Design Flow

Commenter – Jack Bale, Wilson Bale Associates:

"Soil Absorption Rate. Page 166, paragraph 1 and page 179, paragraph 4

The ELJEN Corporation and Southwest Alternatives Inc. proposed changes to the SAR equation in paragraph R18-9-A312(G) of the rules. The proposal was based on the evidence and experience that was gathered during the successful sizing of more than 80,000 disposal systems world-wide. The proposal was prepared by an Arizona Registered Engineer who is also a mathematician. Although supported by a thousand times the evidence available to support the Department's R18-9-A312(G) equation the, department has ignored the proposed equation in the discussion on page 166, and misrepresented the intent of the submittal on page 179."

Commenter – Lou Brown, SouthWest Alternatives:

"Gallons per Day Daily Flow. In the Preamble it states that a 'commenter requested that the Department include a technology specific SAR for a proprietary treatment product'. The alternative equation was derived from actual Eljen In-Drain systems designed for Arizona and installed in Arizona. It was patterned using the 2001 SARa equation. Due to the fact that the Department chose not have a representative from the Department at the Stakeholders group meeting, the Department has missed out on the opportunity for discussion with this group of individuals. Many of the Stakeholders are people in the Onsite Industry with the knowledge and expertise to make these kinds of recommendations.

The Department has stated that this 'design SAR' is already determined in the equation. However, when a proprietary product applies for a proprietary review under R18-9-A309 (E), to establish design criteria acceptable with the Department, the product industry has been stonewalled and delayed by the Department. The Department should establish reference designs for each product listed in the product listing, but only after the Department has met with that specific product to establish the reference design. This would eliminate a lot of the misinterpretation of how some of these alternative systems are to be design. It would make the delegated agencies jobs much easier to approve submitted designs by have established guidance on record with the Department. In discussions with county regulators regarding the Eljen Sizing and Design criteria, almost everyone wants something similar to what the Eljen Corporation and ADEQ agreed upon with the original approval in 1998. With the revenues generated from Transfer of Ownership Inspections, the Department should be able to easily develop this protocol."

Response: The Department stands by its explanations in the Preamble on both page 166 (the discussion actually begins about midway down on page 165) and page 179. To amplify the discussion on pages 165-166, it should be

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emphasized that stakeholders reached no consensus on an alternative equation for calculating adjustments to the SAR (soil absorption rate) that considers a full range of soil permeabilities and treatment performance. (The commenter, in referring to the SAR equation, is actually referring to R18-9-A312(D)(3), not R18-9-A312(G)). The Department does not agree that it should base an equation that is applicable to a wide range of soils and technologies on information developed by the manufacturer of one type of alternative system technology. The Department reiterates its statement in the Preamble that this is an area needing further data from research and the resulting discussion of such findings by stakeholders.

On page 179, the Department was asked to consider a “technology-specific SAR” for the engineered pad technology, which is covered by the 4.09 General Permit at R18-9-E309. The Department’s response then, and now, is that the “it is not appropriate to include technology-specific SARs in the rule because a fundamental premise of the SAR is that it is technology-independent....” In fact, specifying a technology-specific SAR would usher a return to the chaos that is common in other jurisdictions across the country, where soil absorption criteria vary from technology to technology, soil to soil, treatment performance to treatment performance, with little overall consistency. Such technology-specific SARs often reflect the ability of a particular manufacturer to successfully lobby the jurisdictional authority for an SAR that is advantageous to their product. As mentioned in the previous paragraph, the Department is open to further research and discussion on possible improvements to the SAR equation, but by the very nature of the equation’s universal applicability, any change to it would have an advantageous or disadvantageous consequence to all manufacturers that is proportional to their product’s relative treatment performance. This is a major reason the Department crafted a performance-based approach to its on-site rule in the first place in 2001. No change has been made to the rule.

R18-9-C305. 2.05 General Permit: Capacity, Management, Operation, and Maintenance of a Sewage Collection System

Commenter – Dorothy O’Brien, City of Peoria:

“Paragraph six discusses the compliance with six performance standards listed in R18-9-E301(B). This section has seven standards.”

Response: The Department made the correction.

SPECIFIC RULE COMMENTS

ARTICLE 1. AQUIFER PROTECTION PERMITS – GENERAL PROVISIONS

R18-9-101. Definitions

Commenter – Angela Lucci, City of Surprise:

“What is the official definition of ‘ambient,’ with regard to its use in the definition of AQL? We recommend adding the definition to the rules.

If an AQL changes for a pollutant (i.e. if an Aquifer Water Quality Standard changes, as in the case of arsenic), will ADEQ reissue an existing APP, or will ADEQ leave the AQL in an existing APP as is? Will it be up to the permittee to modify the APP if an AQL changes? Please clarify.”

Response: The definition the Department uses for the term “ambient” is the dictionary definition meaning “surrounding” (The American Heritage Dictionary of the English Language, Fourth Edition Copyright © 2000 by Houghton Mifflin Company.) The concept of ambient water quality is embodied in A.R.S. § 49-243(B)(3) where a permittee is prohibited from further degrading the aquifer if a pollutant already violates an aquifer water quality standard at the time of permit issuance. To determine whether or not this condition exists one must assess the water quality in the aquifer immediately surrounding the proposed point of compliance. R18-9-A202(A)(6)(b)(i) and (ii) describe how the ambient water quality is to be determined using representative samples and providing an Ambient Groundwater Monitoring Report. The Department expects that an applicant will use procedures commonly employed by groundwater professionals practicing in Arizona to establish ambient water quality in the report.

If an aquifer water quality standard for a pollutant is revised by rule, the Department expects to change the AQL for that pollutant in previously issued aquifer protection permits. R18-9-A211(D)(2)(g) allows for amending the permit to conform to changes in rule. If the change for a permitted facility results in a situation where the AQL must be set above the new aquifer water quality standard, the Department would use the groundwater monitoring data submitted during operation under the permit to assess ambient water quality. No change has been made to the rule

Commenter – Sydney Hay, Arizona Mining Association: (Subsection (2))

“ADEQ has statutory authority to establish alert levels that ‘when exceeded’ may trigger adjustments of permit conditions or implementation of contingency plan actions. A.R.S. § 49-243(K)(7). The statutory language does not give ADEQ broad authority to establish alert levels for any type of permit condition. Rather, because only numeric values may be ‘exceeded,’ alert levels must be limited to numeric values and this clearly was the Legislature’s intent when the statutory alert level language was adopted.

AMA respectfully requests that ADEQ retain the existing definition of ‘alert level’ as found in the currently effective version of the APP rules. The existing regulatory definition (which has been in effect since shortly after the promul-

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gation of the APP statute in 1987) is legally defensible and consistent with legislative intent. In contrast, the new proposed definition of 'alert level' represents an attempt by ADEQ to rewrite and reinterpret the APP statute. ADEQ has not explained how it is able to discard the limiting statutory language in A.R.S. § 49-243(K)(7) except to assert that the APP statute gives ADEQ broad authority 'to require compliance with BADCT, financial capability, and technical capability requirements' (see 11 A.A.R. at 147). This broad language, however, cannot be used to ignore specific legislative language that limits the use of the 'alert level' concept. See A.R.S. § 41-1052(C)(5).

AMA strongly disagrees with ADEQ's broad justification for its proposed changes to the definition of 'alert level' and we continue to express the concern that the proposed expansion of the definition has no real boundaries. At a large industrial or mining site, it would be possible under the proposed definition to have alert levels for dozens of different permit conditions, all of which could require separate contingency measures and many of which could have little or no connection to protection of aquifer water quality standards at the applicable point of compliance. For those implementing the permit, this could be an enormous economic and regulatory burden. See A.R.S. § 41-1052(C)(3).

AMA also should point out that ADEQ's proposed rewrite of the 'alert level' definition is an attempt to justify existing APP 'non-negotiable' boilerplate language that imposes alert levels in individual APP permits for operational conditions (conditions that cannot be 'exceeded') notwithstanding that the existing regulatory and statutory definition of 'alert level' prohibits such imposition. In other words, ADEQ has not followed the existing APP rules that limit the definition of 'alert level,' consistent with the statutory language in A.R.S. § 49-243(K)(7)), to numeric values 'expressing a concentration of a pollutant or a physical or chemical property of a pollutant.' A.A.C. R18-9-101.2.

For all of the foregoing reasons, AMA again requests that ADEQ retain its existing and statutorily defensible definition of 'alert level.' AMA also requests that ADEQ follow the existing definition of 'alert level' when issuing APPs."

Commenter – Lucas Narducci & Michael Ford / Bryan Cave, BHP Copper: (Subsection (2))

"The proposal presents a tortious justification for ADEQ's unnecessary attempt to expand the definition of alert level beyond its logical, common sense, long-standing, and statutorily-consistent meaning. The proposed definition of 'alert level' cannot be reconciled with the statutory language expressly confining alert levels to 'levels' which can be 'exceeded.' ADEQ's freeboard example mistakenly focuses on the allowable responses to an alert level exceedance as somehow dictating the definition of alert level itself. This attempt at bootstrapping into the regulations a new and unreasonable interpretation of the statutory language is impermissible. The alert level concept can not logically be expanded beyond numeric levels. Moreover, it requires grammatical gymnastics to conclude that a condition of less than an allowable freeboard is somehow an 'exceedance' of a type of alert level. Considering that ADEQ clearly has authority to prescribe 'monitoring requirements,' 'contingency plan requirements,' 'discharge limitations' and 'such other [necessary] terms and conditions,' it is unclear why such degradation needs to be done to the existing definition of alert level. The proposed changes should not be made. (ADEQ would still have discretion to use numeric levels that are not necessarily pollutant concentration levels, however.)"

Commenter – Scott Thomas, ASARCO: (Subsection (2))

"This proposed expansion of the definition of 'alert level' would provide the Department with the authority to establish an alert level for any permit condition. This is of some concern because of the breadth of conditions typically included in APPs. Asarco supports AMA's comments on this issue. If AMA's position is not adopted, then Asarco suggests limiting the authority to set alert levels to more closely track the core concerns of the APP program. Specifically, alert levels should be established only if they indicate a potential violation of a permit condition relating to BADCT or the discharge of pollutants to groundwater."

Response: The Department proposed the changes to the current definition found in rule in response to comments from industry associations. As a result of those comments, the Department determined that the current rule definition is more limiting than provided by statutory authority. A.R.S. § 49-243(K)(7) states:

- K. The director shall consider and may prescribe in the permit the following terms and conditions as necessary to ensure compliance with this article.*
- 7. Alert levels which, when exceeded, may require adjustments of permit conditions or appropriate actions as are required by the contingency plans.*

The statutory language creates linkage between alert levels and any authorized permit conditions as well as contingency actions. Nothing in this statute restricts alert levels to use only with respect to monitoring for pollutants with Aquifer Water Quality Standards. Instead, the statute authorizes alert levels to be used in conjunction with any of the permit conditions listed in A.R.S. § 49-243(K).

Furthermore, use of the word "level" in the term "alert level" in the statute does not require only that a numeric value be used to delineate in the permit the point at which alert status occurs. A dictionary definition of the word "level" taken from *The American Heritage Dictionary of the English Language*, Fourth Edition Copyright © 2000 by Houghton Mifflin Company, states that level may also represent either:

- a. Relative position or rank on a scale: *the local level of government; studying at the graduate level.*
- b. A relative degree, as of achievement, intensity, or concentration: *an unsafe level of toxicity; a high level of frustration.*

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“Alert level” has a broader connotation than simply numeric values and may include an operational condition as well. As discussed in the preamble, an operational condition to “maintain at least 2 feet of freeboard in an impoundment” is a relative position or rank that is measurable. Clearly, less than 2 feet of freeboard would result in a fluid level being “exceeded” and falls within the statutory authority. Some other examples of Aquifer Protection Permit operational conditions signaled by alert levels that are relative, but not numeric, include the following:

- Presence of fluid in a piezometer or sump can indicate that a discharge has occurred where a non-discharging condition is required by a facility’s BADCT design. The alert status typically requires leaks to be investigated and fixed.
- Observation of the presence of seepage through a dam or berm can indicate impending failure of the containment structure. The alert status typically requires repair of the structure to avert catastrophic release of pollutants.
- A condition of excessive cracking noted during inspection of a liner can indicate leakage is occurring. The alert status typically requires draining the impoundment and repair or replacement of the liner.
- Detection of a pollutant identified in A.R.S. § 49-243(I) can indicate that pollutants are present in the discharge that are to be removed to the maximum extent practicable regardless of cost. The alert status typically requires adding some treatment technology to further remove these pollutants.

Establishing an alert level in a permit does not have to be specifically tied to an exceedance of an AWQS at the POC as the current rule definition presumes. As one commenter stated, an alert level is also appropriate to indicate a potential violation of a permit condition related to BADCT. Thus, setting alert levels to determine the state of operation of facilities and including discharge limitations and contingency plan responses in the permit that are triggered by these alert levels is appropriate. Action in response to exceeding an alert level can ensure that a facility’s discharge controls are maintained according to BADCT in addition to preventing violation of aquifer water quality standards.

Commenter – Sydney Hay, Arizona Mining Association: (Subsection (22))

“The second sentence of the proposed definition of ‘land treatment facility’ states that ‘land treatment facility’ includes biosolids drying, processing, or composting. AMA interprets this language (in combination with the first sentence in proposed R18-9-101.22) to mean that if biosolids drying, processing, or composting takes place wholly or in part on the land surface, then such activities constitute ‘land treatment.’ However, if biosolids drying, processing, or composting does not take place on the land surface (for example, it occurs on a concrete pad) then the activities would not meet the definition of ‘land treatment facility.’ AMA requests ADEQ’s concurrence with this interpretation.”

Response: The Department previously evaluated this comment to limit the definition to only those activities that occurred directly on the land surface. However, we did not make that change to the rule because all land treatment facilities are regulated under APP unless there is a demonstration under A.R.S. § 49-241(C). At the current time, the Department is focusing on those facilities where treatment is occurring directly on the land surface. The adequacy of a facility’s liner would be evaluated as a component of BADCT. No change has been made to the rule.

Commenter – Lucas Narducci & Michael Ford / Bryan Cave, BHP Copper: (Subsection (3) and R18-9-A205(C))

“AQL should not be defined as a ‘permit’ limitation, because an exceedance does not necessarily indicate a permit violation. Rather, an exceedance indicates only a potential permit violation; an AQL exceedance must be caused by the permittee’s discharge to constitute a permit violation. Although ADEQ has expressed in public meeting on the draft rulemaking proposal its concurrence that a permit violation only arises if a facility causes an AQL, the new proposed language at R18-9-A205 still implies that the mere existence of sampling data indicating an exceedance of an AQL, without more, would constitute a permit violation. This language should be clarified by changing both instances of ‘facility exceeds’ to ‘facility causes an exceedance.’”

Response: The AQLs in an individual APP are established at the time of permit issuance based on water quality data provided in the application for the permit. If monitoring shows that the AQL is exceeded, then the Department will issue a Notice of Violation unless the permittee demonstrates that the level of that pollutant did not result from the permittee’s activities. Before taking any formal enforcement action, the Department will evaluate the information that the permittee submits. No change has been made to the rule.

Commenter – Joelle Wirth: (Subsection (8))

“ADEQ believes an unfinished basement will be addressed when the property is sold. This is not true. The Transfer of Ownership does not require documentation on the existing floor plan be provided at sale. The new rules do not address this. Rather it is optional to use the checklist and records as a resource. The preferred course would be to correct the Transfer of Ownership processes to record the size of the wastewater system in flows equivalent to Fixtures and or bedrooms.”

Response: The use of the inspection checklist will not be optional under the proposed rule. In this rule, at R18-9-A316(C), the Department *will require* that the inspector “complete a Report of Inspection on a form approved by the Department.” It should be noted though, that even the optional inspection form currently recommended by the Department and posted on its web site does request a determination of design flow, which may be based on bedroom

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count, fixture units, or other appropriate basis. In fact, the Department has no intention of eliminating bedroom count as a basis for determining design flow on the mandatory form that will be required under the proposed rule. No change has been made to the rule.

Commenter – Morgan Stine, Canyon Services: (Subsection (8)(d))

“This definition was modified from the UBC or new international code and will cause an burden of between 20% to 33% increase in the overall cost of an on-site system. Under the proposed definition where a room without a closet must be counted as a bedroom, even a laundry room would be considered a bedroom. Most homes three bedrooms and larger have one room that is an office, studio, library, sewing room, den, solarium, mud room, etc., and do not need or intend to use the room as a bedroom. Failures of larger sized systems, four bedrooms and larger, are few in ratio to the two and three bedroom failures. If Arizona averages 12,000 on-site systems per year and the average cost is \$6000, allowing for the 5% alternate designs, the increase in cost in having to construct a four bedroom rather than a three bedroom or a five bedroom rather than a four bedroom would be approximately \$2000 per bedroom increase. I believe this will effect 20% of the applicants for a total cost to the taxpayers of \$4,800,000 based on 12,000 on-site systems per year? Is this really necessary, or is this an over-site into the way the language was written for this section?”

Response: The Department disagrees with commenter’s premise that many rooms in a house that are not bedrooms and were not intended to be bedrooms will be considered bedrooms for the purpose of calculating design flow. This would result in the calculation of a larger design flow and, hence, the design of a larger on-site system than is really needed. In fact, all of the criteria listed in the definition of bedroom in R18-9-101(8) need to be considered together, not just R18-9-101(8)(d), in making the determination of number of bedrooms. Of particular relevance is R18-9-108(8)(f), which specifies that in order for a room to be considered a bedroom, it must have “a method of entry and exit to the room which allows it to be considered distinct from other rooms in the dwelling to afford a level of privacy customarily expected for such a room.” This criterion, together with the others in R18-9-108, will result in delegated agencies making reasonable determinations of the number of bedrooms to determine design flow. The Department will monitor implementation of these criteria by delegated agencies and be sensitive to any situations where the design flow has been determined excessively or inappropriately. No change has been made to the rule.

R18-9-104. Transition from Notices of Disposal and Groundwater Quality Protection Permitted Facilities

Commenter – Lucas Narducci & Michael Ford, Bryan Cave; BHP Copper:

“The fundamental issue of the scope of applicability of the APP program is simply not susceptible to alteration and expansion by rulemaking. ADEQ’s discussion in the Explanation notwithstanding, the Legislature plainly limited the program to current owners and operators (see A.R.S. §49-241.A), and clearly could have, but did not, extend it to historical operators. The APP program is not CERCLA or WQARF. The reference to ‘operated’ should be deleted.”

Response: The Preamble explanation has been revised as follows to clarify that any facility that operated under a NOD or GWPPP, whether that facility is currently operating or not, is subject to the requirements of the APP program.

Adding the word ‘operates.’ This addition is necessary to clarify that an owner is not necessarily an operator and that any person who operates a facility under a NOD or GWQPP is responsible for submitting an application for an APP. The term “operated” is necessary because some discharging facilities authorized under a NOD or GWQPP are no longer active but the past operator is responsible for closing the facility properly, including obtaining an APP to close if necessary.

Commenter – Sydney Hay, Arizona Mining Association:

“A.R.S. § 49-241(A) creates the statutory requirement for obtaining an APP permit. It provides that ‘[u]nless otherwise provided by this article, any person who discharges or who owns or operates a facility that discharges shall obtain an aquifer protection permit from the director.’ (Emphasis added). This language is clear on its face, and unambiguously does not extend to past owners and operators. The legislature knows how to extend liability to past owners and operators when it wants to (see A.R.S. § 49-283(A)(1) (WQARF statute), imposing liability on any party that ‘owned or operated’ the facility), but chose not to do so in the APP program. ADEQ does not have statutory authority under the APP statute to impose APP requirements on past operators. See A.R.S. § 41-1052(C)(5). Accordingly, ADEQ should change the phrase ‘owns, operates, or operated’ in this subsection to ‘owns or operates’ to clarify that the requirement to obtain an APP permit or closure sign-off is limited to any person who owns or operates the facility. This change would be consistent with existing regulatory language found at A.A.C. R18-9-105.A.1.b and R18-9-105.A.2.

ADEQ’s attempts to justify ignoring the clear statutory language in A.R.S. § 49-241(A) by citing to the statutory definitions of ‘existing facility,’ ‘closed facility,’ and ‘new facility’ in A.R.S. § 49-201 (see 11 A.A.R. at 149). These definitions, however, do not address the issue that the statutory authority of ADEQ under the APP program is to issue APPs to persons who own or operate facilities, whether the facilities qualify as ‘existing’ or ‘new.’ ADEQ does not have authority to require past operators to obtain APPs unless they qualify as the current owner or operator of the facility.”

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Response: Use of the past-tense in the term “operated” is not a change from existing rule language. The Department intends to maintain this use of the past-tense as it is necessary to describe instances where a person operated a facility subsequent to the effective date of the statute but is not currently operating the facility. The Department does not interpret this aspect of existing rule to extend the applicability of the APP program to discharges that occurred prior to 1986. The statutory definition of closed facility and the exemption given in A.R.S. § 49-250.B(11) make it clear that the APP program does not apply to facilities operated prior to 1986 that were closed before the applicability date of the program. Likewise, an APP permit would not be required of an operator who ceased operating prior to 1986. Any facility that operated under a NOD or GWPPP, whether that facility is currently operating or not, is subject to the requirements of the APP program. To further clarify this Section, the phrase “on or after January 1, 1986” has been added to the rule as follows:

B. *A person who owns, operates, or operated a facility; on or after January 1, 1986 for which a Notice of Disposal was filed or a Groundwater Quality Protection Permit was issued; ~~or who owns or operates a facility required to obtain an Aquifer Protection Permit~~ shall, within 90 days from the date on the Director's notification, submit an application for an Aquifer Protection Permit or a closure plan as specified under A.R.S. § 49-252. The person shall obtain a permit for continued operation, closure of the facility, or clean closure approval. Failure to submit an application or closure plan as required terminates continuance of the Notice of Disposal or Groundwater Quality Protection Permit.*

R18-9-107. Consolidation of Aquifer Protection Permits

Commenter – Sydney Hay, Arizona Mining Association: (Subsection (A))

“AMA appreciates ADEQ’s past clarification that this subsection generally will only be used when requested by the permittee. However, because there is no limiting language in the actual rule, AMA continues to request that this subsection be revised with specific language to clarify that consolidation may occur only if requested by the permittee. Alternatively, the reference to consolidation of general permits into a single individual permit should be deleted. It is inappropriate to give ADEQ the unilateral ability to consolidate facilities otherwise authorized under general permits into an individual permit.”

Response: This provision is consistent with statutory authority provided in A.R.S. § 49-243(J) that authorizes the Department to issue a single individual permit to multiple facilities under common ownership that are located in a contiguous geographic area. The Department has not changed the rule language except to use the term “coverage” to conform to the way general permits are described elsewhere in the rule. A facility authorized to discharge under a general permit, which is effective for a specific period of time, might eventually wish to be permitted under an individual permit, which is effective for the life of the facility. No change has been made to the rule.

ARTICLE 2. AQUIFER PROTECTION PERMITS – INDIVIDUAL PERMITS

PART A. APPLICATION AND GENERAL PROVISIONS

R18-9-A201. Individual Permit Application

Commenter – Dalva Mohllenberg / Gallagher & Kennedy, Phelps Dodge: (Subsection (B)(5))

“In PDC’s comments on the draft rule, PDC suggested additional language to be added to R18-9-A201(B)(5) to specify the use of a ‘net present value’ method to calculate the estimated cost of closure when implementation of closure and post-closure will not be initiated for several years and/or will take place over a period of several years. The proposed rule does not include this language. PDC believes that the rule as proposed allows the flexibility for a permit application to propose a cost estimate on a ‘net present value’ basis. This means that for anticipated closure and post-closure costs incurred over a period of several years, the estimated costs should be discounted to reflect the time-value of money. This approach is commonly used in many regulatory programs, and is necessary to avoid imposing a financial assurance amount that may substantially exceed the actual cost of closure and post-closure over a long period of time. While PDC believes that the proposed rule allows a permit applicant to use this approach by including and explaining a net present value cost estimate methodology in a proposed closure plan or strategy, PDC requests that the Department consider adding the following language at the end of R18-9-A201(B)(5)(b)(i) and (ii):

‘The cost of closure estimate may be based upon a net present value calculation to reflect the expected date of commencement and the duration of closure under the closure plan or strategy, subject to the department’s approval of the discount rate used in the calculation.’

If the Department chooses not to add this language, PDC requests that the Department confirm in its explanation of the final rule that the proposed rule allows for a net present value method to estimate the long-term costs, and the appropriate amount of financial assurance, to avoid the imposition of excessive amounts of financial assurance for the cost of implementing a long-term closure and post-closure plan.”

Response: The Department will consider any reasonable approach to estimating long-term closure costs using acceptable accounting methods. Depending on the proposed methodology, permits may include compliance schedules requiring frequent, periodic review of assumptions such as discount rate and annual updates of the cost estimate.

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However, the Department would like to emphasize its preference to use methods that do not require frequent amendments to the permit. No change has been made to the rule.

Commenter – Scott Thomas, ASARCO: (Subsection (B)(5)(b))

“The language in this subsection is a little awkward, and would read more clearly as follows: ‘The following cost estimates, WHICH ARE representative OF regional fair market costs.’”

Response: The Department made the changes requested.

Commenters – Robert Anderson, Homebuilders Association; Robert Anderson, Robson Communities; Fred Goldman / Kennedy/Jenks Consultants, Sunterra Partners: (Subsection (B)(6)(a))

“208 Consistency. R18-9-A201.B.6.a. requires that the applicant for an APP demonstrate that the proposed facility is ‘conforms to the Certified Areawide Water Quality Management Plan [commonly referred to as the ‘208 Plan’] and the Facility Plan . . .’ As the Department is aware, project proponents seeking to permit a new or expanded wastewater treatment facility typically need to seek an amendment to the 208 Plan concurrently with facility permitting (including an APP). The current draft rule would require the 208 amendment process to be complete before an APP application could be filed. This will create substantial delays in permitting. We suggest that the Department allow an applicant to demonstrate how the proposed facility will be consistent by the time the permit is issued. An important milestone is the approval by the applicable council of governments (COG) of the proposed amendment. The Department could use this milestone as a threshold for proceeding with public notice. Because of some of the uncertainties with the COG process (including timing of board and subcommittee meetings), we suggest that the Department retain the discretion to waive this requirement. To accomplish this, the rule should be revised as follows:

R18-9-A201.B.6.a. Documentation. A demonstration that the sewage treatment facility or expansion conforms or will conform with the Certified Areawide Water Quality Management Plan and the Facility Plan. If the sewage treatment facility does not conform to the Certified Areawide Water Quality Management Plan at the time of application but the applicant is seeking an amendment, the applicant shall provide documentation that the applicable council of governments has approved the amendment prior to issuance by the Department of the Notice of Preliminary Decision in R18-9-109.A. The Department may waive this requirement for good cause shown.”

Response: Within the framework of licensing time-frames that governs the Department’s processing of permit applications, the current rule is problematic – as is the commenter’s proposal. It is too late to suspend time-frames at the public notice stage if conformance with the 208 Plan has not been determined. The only option left to the Department would be to make a decision to deny the permit application. To avoid such a situation, this change was made in the proposed rulemaking. The intent of the rule change is to force the planning process to precede the application, which is where it should occur. An application may be submitted before the consistency determination is made but the application will be administratively incomplete until plan consistency is determined. No change has been made to the rule.

Commenter – Marie Light, Tucson Water: (Subsection (C)(3))

“A special provision has been added for underground storage facilities. The new provision requires underground storage facilities file applications for APPs, even for project which have been exempt by A.R.S. § 49-250. The following recommendation maintains consistency with existing statutes. The inserted text is underlined and deleted text is italicized.

Special provision for underground storage facilities as defined in A.R.S. § 45-802.01(21). Unless exempt according to A.R.S. § 49-250, a ~~A~~ person applying for an individual permit for an underground storage facility shall submit the information described in R18-9-A201 through R18-9-A203, except for the BADCT information specified in R18-9-A202(A)(5).”

Response: The rule explicitly states in R18-9-103 that APP regulation does not extend to facilities exempted in A.R.S. § 49-250(B). The underground storage facilities the commenter describes are included among the referenced exempt facilities. No change has been made to the rule.

Commenter – Sydney Hay, Arizona Mining Association: (Subsection (G)(3))

“This subsection should be deleted for several reasons. First, it creates time frame requirements that may be difficult for ADEQ to meet for complex permits. As required in R18-9-109, ADEQ is required to respond in writing to all written comments submitted during the formal comment period. The time frames established in R18-9-A201.G.3 may not give ADEQ sufficient time to meet this regulatory requirement. Additionally, the time frames may not give ADEQ adequate time to consider and respond to legitimate comments or concerns raised during the formal public comment period. If this subsection is not deleted, it should at least be amended to allow the applicant and ADEQ to waive the decision deadlines established in subsection G.3.”

Response: This provision is essentially the same as the current rule with only minor editorial corrections. The effect of this rule provision is very limited. The only applications that are not subject to licensing time-frames (LTF) are those that were submitted before the LTF rule took effect. This is currently limited to 12 existing mining facilities. The Department is committed to meeting its statutory mandate to issue APPs to the existing mines by January 1, 2006. In order to meet this deadline, the Department expects that many of the permits will be in public notice or

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issued before the effective date of this rule. Therefore, the Department has determined that there is no longer any necessity for this rule provision and has deleted it from the rule.

R18-9-A202. Technical Requirements

Commenter – Robert Anderson, Homebuilders Association: (Subsection (A)(6)(b))

“Technical comments were provided to the Department by e-mail in the last round of rule drafting. The comments do not appear to have been addressed in this draft. Those comments are:

R18-9-A202.6.b. requires an ambient groundwater monitoring report to be included with the APP application. The report must include 8 or more rounds of ambient groundwater samples collected ‘to represent’ water quality at the proposed point of compliance. The rule should be clear that the samples do not have to be collected at the point of compliance, since that point is not set until the permit is issued. Also, to require samples from the point of compliance would require the construction of a monitoring well before the permit sets the location of the point of compliance. Ambient groundwater samples are currently allowed to be drawn from wells other than those located at the proposed point of compliance. This practice should be allowed to continue.”

Commenter – Sydney Hay, Arizona Mining Association:

“It is AMA’s position that the proposed language requiring the submittal of an ambient groundwater monitoring report as part of the individual permit application be removed for several reasons, as AMA has stated in prior versions of its comments on ADEQ’s proposed changes to the APP rules. First, the establishment of appropriate points of compliance is negotiated and often is unknown until the permit is finalized. In fact, the current and proposed APP rules only require that an individual application contain ‘proposed’ points of compliance (see A.A.C. R18-9-A202.A.6). It would be impossible to submit a relevant ambient groundwater monitoring report without a clear understanding of the actual location and numbers of points of compliance for a particular facility or group of facilities.

Second, the proposed language would eliminate the ability of ADEQ and the permittee to negotiate in the permit how to establish ambient groundwater quality data. In many instances, the requirement to establish ambient groundwater quality is outlined in the permit.

Third, the proposed change would seem to require that a permittee collect two years of point of compliance groundwater data before submitting a permit application. This is not authorized by statute, and, as noted above, is a practical impossibility because the location of the points of compliance is negotiated during the permitting process.

Fourth, the determination of whether an applicable aquifer water quality standard is exceeded is required by statute to be made at the time of permit issuance (see A.R.S. § 49-243(B)(3)), not at some point prior to permit issuance. Some permits, notwithstanding licensing timeframe requirements, may be issued years after submittal of the initial application.

Fifth, AMA disagrees with ADEQ’s characterization (see 11 A.A.R. at 151) that a permittee must submit certain information to take advantage of the ‘claim’ that an aquifer water quality standard is already exceeded in an aquifer at the time of permit issuance. Whether or not an aquifer water quality standard is exceeded at the time of permit issuance is not a ‘claim’ by a permittee, rather it is an express provision in the APP statute (see A.R.S. § 49-243(B)(3)) that applies only to ‘applicable’ points of compliance not to ‘proposed’ points of compliance submitted as part of the permit application. See A.R.S. § 41-1052(C)(5).”

Commenter – Scott Thomas, ASARCO:

“With respect to this section, Asarco has the following comments:

(1) The preamble (11 A.A.R. at 151) makes clear a few things about the newly required ambient groundwater monitoring report that are not clear in the rule language itself, but should be made explicit in the rule. Specifically, we suggest: (a) adding ‘In such case’ at the beginning of the second sentence of proposed A.A.C. R18-9-A202(A)(6)(b), to make crystal clear that the report is required only if an AWQS is exceeded at the time of permit issuance; and (b) adding language clarifying that if the data is not available at the time of permit application, the Department may include a requirement in the permit to gather the information.

(2) In addition, the first sentence of proposed A.A.C. R18-9-A202(A)(6)(b) should refer to the exceedance of an AWQS at the proposed point(s) of compliance, rather than ‘in the aquifer.’ Because the study will be used to help determine AQLs at the POC(s), the study should focus on the POCs and not the entire aquifer (which includes the vadose zone, perched aquifers, etc.).”

Commenter – Lucas Narducci & Michael Ford / Bryan Cave, BHP Copper:

“ADEQ’s definition of what constitutes an ‘Ambient Groundwater Monitoring Report’ remains unclear. Moreover, to the extent such a report is required as an application component to establish water quality at a POC at the time an application is first submitted, this requirement is impractical, unwarranted and unauthorized in that it would require years of data collection at a speculative POC in order for an aspiring permittee to even submit an application. This report may also be unnecessary, as it may have already been established that the aquifer at issue does not meet aquifer water quality standards. At a minimum, the report should be permissive, and ADEQ should retain flexibility to the address the report in accordance with a negotiated compliance schedule issued with the draft permit. Section R18-9-

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A202.A.6.b should be revised to accommodate this flexibility for ADEQ and the applicant. While ADEQ's discussion of the provision contemplates such flexibility, it is not reflected in the mandatory language of the rule proposal. The language could be improved by changing 'shall submit' to 'may be required to propose and implement an Ambient Groundwater Monitoring Plan.'"

Response: The Department recognizes that it is always in the applicant's best interests to define ambient water quality as thoroughly as possible before their permit limits are set. This process saves all parties the trouble of responding to compliance situations that are not the result of a facility's discharge.

Several commenters point out that location for the points of compliance may not be established until the permit is finalized. Location criteria for points of compliance are found in A.R.S. § 49-244. The Department often negotiates locations for points of compliance at pre-application conferences or at other stages in the permit development process rather than at the permit drafting stage, providing that there is enough information about the pollutant management area, nearest points of use of the aquifer, and the groundwater gradient. The Department recognizes that the locations of points of compliance are not always exactly known when an application is submitted. This is why the rule refers to "proposed" points of compliance. The rule makes it clear that the samples only need to "represent groundwater quality at the proposed points of compliance" (emphasis added.) The Department expects that an applicant will use procedures commonly employed by groundwater professionals practicing in Arizona to establish ambient water quality. Data from wells at locations other than the points of compliance may be used in such a manner if the data can be technically justified to be representative. The Department will make every effort to use the information in the ambient groundwater monitoring report to establish credible AQLs in the APP. As stated in the Preamble, if the data are unavailable before permit issuance, the Department may include in the permit a requirement to collect additional data. The Department uses the authority for compliance schedule requirements in R18-9-A208 to set requirements for additional ambient monitoring for existing facilities and some new facilities so long as R18-9-A208(C) does not come into play. R18-9-A208 can be used for new facilities where ambient data is not otherwise needed to demonstrate that the facility will not further degrade the aquifer, e.g., the discharge quality conforms to all AWQS at the point(s) of release.

Some commenters are concerned that two years of data takes too much time to collect. Some commenters also believe that the statutory requirement in A.R.S. § 49-243(B)(3) seems to require a "snapshot" because it states "at the time of permit issuance" as the point at which the water quality should be gauged, if it exceeds AWQS. In past rule-making proceedings stakeholders have emphasized the importance of A.R.S. § 49-243(B)(3), and it is critical for most facilities to collect this information before the permit is issued. However, a snapshot is not technically possible, and the methods commonly employed by groundwater professionals practicing in Arizona to establish ambient water quality require multiple data taken over a period of time in order to get statistically representative information. Fortunately, groundwater generally does not move fast, and data collected over an extended time-frame is usually acceptable as representative, as long as it is not influenced by the discharge of the facility. Collecting eight rounds of data does not necessarily require that samples be collected quarterly over two years. A shorter time-frame is acceptable as long as the samples are representative. If, on the other hand, a permit is issued after a long period of processing time, the applicant may submit additional, updated monitoring information and the Department will include it as part of the ambient groundwater monitoring assessment used to calculate permit limits when drafting the permit.

The Department agrees with the statement that A.R.S. § 49-243(B)(3) is not a "claim" as stated in the Preamble. The Preamble language has been changed to state, "In general the Department recommends that the applicant perform and collect the data up-front if the applicant intends to conform to A.R.S. § 49-243(B)(3) as a demonstration to satisfy permitting requirements."

The Department agrees that the first sentence of R18-9-A202(A)(6)(b) should refer to exceeding an AWQS "at the proposed point(s) of compliance" rather than "in the aquifer." The Department agrees to add "In this case" at the beginning of the second sentence of proposed R18-9-A202(A)(6)(b), to make it clear that the report is required only if an AWQS is exceeded.

Commenter – Sydney Hay, Arizona Mining Association: (Subsection (A)(8)(b)(viii))

"The proposal to add the phrase 'or cause the migration of contaminated groundwater' should not be adopted. The APP program requires compliance with aquifer water quality standards or a no further degradation standard consistent with the statutory language in A.R.S. § 49-243(B)(2) and (3). This concept is already addressed in the hydrogeologic study rule language at R18-9-A202.A.8.a, which requires that the hydrogeologic study demonstrate compliance with A.R.S. § 49-243(B)(2) or (3). There is no statutory authority for the APP program to require a permittee to assess or prevent the migration of contaminated groundwater, except as mandated by A.R.S. § 49-243(B)(2) and (3). See A.R.S. § 41-1052(C)(5). Additionally, it is unclear what 'causing' the migration of contaminated groundwater means. The phrase should be removed."

Commenter – Scott Thomas, ASARCO:

"Asarco shares the serious concerns expressed by AMA on this issue, and opposes the adoption of the new language in this section. The following comments apply only if ADEQ retains this concept in some fashion in the final rules.

(1) The rule language should be modified to be consistent with the intent expressed in the preamble. In other words, rather than the vague 'cause the migration' standard, the inquiry should be focused on the possibility of the facility's

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discharge resulting in an AWQS being ‘exceeded at a point of use of the aquifer that will otherwise remain unpacted’ (11 A.A.R. at 151). Moreover, this inquiry should focus only on off-site points of use, rather than points of use within the permitted facility.

(2) The phrase ‘contaminated’ groundwater is also vague. The preamble suggests that it is ‘in general,’ groundwater exceeding an AWQS. This needs to be clarified. Moreover, what is the Department’s position on groundwater that naturally exceeds an AWQS? Is that treated the same as water that may have been impacted by human activities?”

Commenter – Lucas Narducci & Michael Ford / Bryan Cave, BHP Copper:

“What ADEQ considers ‘contaminated groundwater,’ or the reference point for its ‘migration,’ remains unclear. However, the APP statute establishes the ‘point of compliance’ as ‘the point at which compliance with aquifer water quality standards shall be determined.’ A permitted discharge activity within an applicant’s pollutant management area (PMA) is subject to compliance with AWQS at the point of compliance (POC) in groundwater. To the extent the new language implies that any migration of impacted groundwater, whether inside or outside of the PMA, is subject to this assessment, it is inconsistent with the statutory POC framework. The permit issuance procedures already call for the documentation of existing water quality, and if pre-existing contamination exists at the facility which exceeds AWQS at the POC, the new operator will not be allowed further degradation at the POC. Aside from deletion, the, the proposed language could be improved by revising it to read: ‘...or cause the migration of impacted groundwater that would cause or contribute to a violation of AWQS at the POC.’”

Response: The addition to R18-9-A202(A)(b)(viii) of a provision to evaluate whether the discharge will “cause the migration of contaminated groundwater” has been changed in response to comments. From work with the Arizona Department of Water Resources (ADWR) in permitting groundwater recharge projects, the Department is aware that this high volume discharge to the aquifer may cause the migration of poor quality groundwater because of significant changes to gradients and flow regimes in the aquifer. The proposed language was added primarily to address such possibilities and evaluate whether or not they present a potential to impair use of the aquifer or endanger human health (see R18-11-405.) This type of evaluation is typically performed in hydrologic studies for all recharge projects including those that are exempt from APP permitting. The Department added subsection (ix) to clarify that this provision applies only to underground storage facilities.

The statement in the Preamble that contaminated groundwater consists of groundwater that “exceeds an AWQS” clearly expresses what the Department expects. However, it might be more appropriate to use the word “violates” rather than “exceeds” because sometimes the phrase “exceeding standards” is used in the context of indicating a good quality condition. The Department intends that groundwater naturally violating AWQS be included in the evaluation submitted under R18-9-A202(A)(8)(b)

Subsection (A)(8)(b) has been revised as follows and the remaining subsections renumbered accordingly:

viii. An assessment of the potential of the discharge to cause the leaching of pollutants from surface soils or vadose materials;

ix. For an underground water storage facility, an assessment of the potential of the discharge to cause the leaching of pollutants from surface soils or vadose materials or cause the migration of contaminated groundwater;

Commenter – Lucas Narducci & Michael Ford / Bryan Cave, BHP Copper: (Subsection (A)(10))

“As currently written, the new requirement for ‘closure and post-closure strategies or plans’ forms the basis for the proposed closure cost estimate defined in R18-9-A201(B)(5)(b)(i). Existing APP rule R18-9-A209(B)(2) also requires an applicant to estimate the cost of closure. These requirements do not really differ. It is suggested that no change be made to the language.”

Response: The proposed rulemaking did not change this subsection. The phrase “closure and post-closure strategies or plan” was shifted from subsection (A)(9) to subsection (A)(10) so that it could more easily be cited within other Sections of the rules. No change has been made to the rule.

R18-9-A203. Financial Requirements

Commenter – Scott Thomas, ASARCO:

“The phrase ‘book net worth’ should be included in the definitions (proposed A.A.C. R18-9-A203(A)). It is used in the definition of ‘tangible net worth,’ and defining book net worth would make the definition of ‘tangible net worth’ more understandable, especially as the definition of book net worth provided in the preamble (total assets minus total liabilities, see 11 A.A.R. at 152) is so readily found on most balance sheets.”

Response: The Department agrees. The definition of “book net worth” has been added in R18-9-101.

Commenter – Robert Anderson, Robson Communities: (Subsection (C)(1))

“We have previously expressed concern about the disclosure of private financial information as part of the financial assurance submittals. We believe that the following revision to the current draft would address these concerns. Please note that we have moved subsection A and renumbered it as subsection c, thereby moving subsection b to a and subsection c to b. This change is not reflected in the underlining and strikeouts below:

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R18-9-A203.C.1. Financial test for self-assurance. The applicant may use a financial test for self-assurance to cover the financial assurance obligation under R18-9-A201(B)(5) if:

- a. The applicant demonstrates:
 - i. One of the following:
 - (1) A ratio of total liabilities to net worth less than 2.0 and a ratio of current assets to current liabilities greater than 1.5;
 - (2) A ratio of total liabilities to net worth less than 2.0 and a ratio of the sum of net annual income plus depreciation, depletion, and amortization to total liabilities greater than 0.1; or
 - (3) A ratio of the sum of net annual income plus depreciation, depletion, and amortization to total liabilities greater than 0.1 and a ratio of current assets to current liabilities greater than 1.5;
 - ii. The net working capital and tangible net worth of the applicant each are at least 6 times the closure cost estimate;
 - iii. The applicant has assets in the U.S. of at least 90 percent of total assets or 6 times the closure cost estimate; and
 - i. For purposes of calculating the financial ratios, the financial statement of the applicant is not consolidated with a higher tier parent or sibling company; or
- b. The applicant demonstrates:
 - i. The applicant's senior unsecured debt has a current investment-grade rating as issued by Moody's Investor Service, Inc.; Standard and Poor Corporation; or Fitch Ratings;
 - ii. The tangible net worth of the applicant is at least 6 times the closure cost estimate;
 - iii. The applicant has assets in the U.S. of at least 90 percent of total assets or 6 times the closure and post-closure cost estimate; and,
 - iv. For purposes of calculating the financial ratios, the financial statement of the applicant is not consolidated with a higher tier parent or sibling company.
- c. The applicant submits:
 - i. A letter signed by the applicant's chief financial officer that identifies the criterion provides the details of the demonstration specified in subsection (C)(1)(b-a) or (e-b) used by the applicant to satisfy the financial assurance requirements of this rule, and an explanation of how the applicant meets the criterion, and certification of its accuracy; and.
 - ~~ii. A copy of a report by an independent certified public accountant on the examination of the applicant's financial statements for the latest completed fiscal year or more recent financial data. If the independent certified public accountant report contains an adverse opinion or a disclaimer of opinion, the applicant does not qualify for the financial test for self-assurance; and,~~
 - ~~iii. ii A special report statement from an independent certified public accountant stating verifying that the demonstration submitted under subsection (C)(1)(a-c)(i) is accurate based on a review of the applicant's financial statement and the report submitted under subsection (C)(1)(a-c)(ii), and no adjustment to the financial statement is necessary; and,~~

Commenter – Dalva Mohllenberg / Gallagher & Kennedy, Phelps Dodge:

"PDC also commented on language in what is now A.A.C. R18-9-A203(C)(1)(a)(iii) to delete language stating that 'no adjustments were necessary' to the financial assurance documents. The proposed rule retains a revised version of this language, stating 'no adjustment to the financial statement is necessary.' PDC believes that this language could unnecessarily require a second review and audit of the financial statement that is duplicative of the requirement in R18-9-A203(C)(1)(a)(ii), if the 'financial statement' is interpreted to mean the same financial statement that must be covered by an audit report under R18-9-A203(C)(1)(a)(ii). If this is not the Department's intent, PDC requests that the language 'and no adjustment to the financial statement is necessary' be removed from R18-9-A203(C)(1)(a)(iii). Alternatively, PDC requests that the Department clarify the meaning of this language. If the Department's intent is to require a second audit of the financial statement, PDC requests that the Department explain why a second, and potentially very costly, audit is necessary.

PDC's comments on the previous draft also requested language clarifying the timing of provision of financial assurance following the issuance of a permit. PDC anticipates that the Department may intend to address these issues in a compliance schedule within an individual permit so that the timeframes for providing financial assurance may be tailored to the individual circumstances. PDC requests that the Department confirm this intent or incorporate specific language concerning when financial assurance must be established following issuance of a permit."

Response: The Department agrees with the commenters and revised R18-9-A203(C)(1) as suggested. The new subsection (C)(1)(c)(ii) has been revised as follows:

- ~~ii. A statement from an independent certified public accountant verifying that the demonstration submitted under subsection (C)(1)(c)(i) is accurate based on a review of the applicant's financial statements for the latest completed fiscal year or more recent financial data and no adjustment to the financial statement is necessary.~~

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The Department does not intend that another audit be performed. Rather, the rule requires that the independent certified public accountant find no problems reconciling the chief financial officer's certification through a review of the applicant's financial statements.

A.R.S. § 49-243(N) requires that financial capability be demonstrated before "the Department issues approval to operate." Therefore, the applicant must make the demonstration before the permit is issued. Alternatively, the Department could issue a conditional permit that does not authorize discharge until the financial demonstration is made under a compliance schedule.

Commenter – Scott Thomas, ASARCO: (Subsection (C)(1)(a)(iii))

"The 'special report' required by proposed R18-9-A203(C)(1)(a)(iii) typically will not be necessary. As a practical matter, the CPA reviewing the data will be the CPA who prepared the data in the first place, as companies will not want to pay for a second audit of their finances. So the only thing that the 'special report' will need to examine is whether the company's CFO – in his or her certified letter - accurately represented the certified financial data. In most cases, it will be readily apparent from the face of the financial data submitted to the Department whether the necessary ratios and other requirements can be demonstrated. No special report is needed.

At a minimum, Asarco suggests that this additional documentation be submitted only upon ADEQ's request, in cases where the Department cannot reconcile the certified data with the CFO's letter. In addition, the phrase 'special report' should be replaced with the word 'documentation,' since a simple letter may suffice to resolve any uncertainties."

Response: The Department agrees with the commenter that it will not be necessary to submit the special report to the Department. Instead, the Department will rely on the statement of the independent certified public accountant. See change to R18-9-A203(C)(1)(c)(ii).

Commenter – Lucas Narducci & Michael Ford / Bryan Cave, BHP Copper: (Subsection (C)(1)(b)(iv) and (c)(iv))

"The restriction against consolidating financial statement with a higher tier parent or sibling company is unnecessary and impractical, and should be deleted. Additional explanation as to ADEQ's concerns in proposing this provision should be provided."

Response: An applicant may use the financial test for self assurance if the applicant can demonstrate satisfaction of the requirements in R18-9-A203(C)(1)(b) and (c). The restriction against consolidating a financial statement with a parent or sibling company applies only to self-assurance in subsection (C)(1). The applicant must be able to demonstrate that it has the financial ability to meet closure costs. If the applicant needs to rely on the financial statements of a parent or sibling company, then the guarantor provisions of R18-9-A203(C)(8) apply. In this case the Department would accept an affidavit from the applicant affirming that the guarantee is valid under all applicable federal and state laws. No change has been made to the rule.

Commenter – Lucas Narducci & Michael Ford / Bryan Cave, BHP Copper: (Subsection (C)(1)(b)(iv) and (c)(iv))

"BHP appreciates ADEQ's statement in the rule Explanation section that 'If the applicant is a publicly traded corporation, it may be appropriate to submit a 10K form or 20F Form for the financial report under subsection (C)(1)(a)(ii).' (11 A.A.R at 152). However, the proposal, without valid reason, deletes the specific references to these reports from the financial assurance rule itself. In light of the common use of such reports, and the widespread reliance on such reports as part of the financial assurance demonstration, ADEQ should retain specific reference to these types of reports in the rule (specifically, in subsection C)."

Response: The Department does not see a need to include the specific forms that will be used to make the financial demonstration as these will not be submitted to the Department for review. Instead, the Department intends to rely on the statement from the independent certified public accountant responsible for reviewing whatever financial documents are necessary to perform the required evaluation of financial status. No change has been made to the rule.

Commenter – Scott Thomas, ASARCO: (Subsection (C)(7))

"With respect to the cash deposit alternative (proposed R18-9-A203(C)(7)), the Department needs to clarify several items, such as: (a) how the cash will be handled (presumably it will be placed in an interest-bearing account with limited access, but this is unclear); (b) that the permittee is entitled to some or all of the cash back if alternative financial assurance mechanisms are later provided; and (c) that the permittee is entitled to any cash remaining in the account after completion of the activities for which the assurance is being provided."

Response: The Department will continue to follow A.R.S. § 35-155, Cash Deposit As An Alternative To A Surety Bond, under the laws for Budgetary And Fiscal Provisions For State Agencies when managing the cash deposit. No change has been made to the rule.

Commenter – Scott Thomas, ASARCO: (Subsection (D))

“In proposed R18-9-A203(D), the first ‘shall’ should be replaced with ‘may.’ Doing so does not diminish the Department’s authority in the slightest, but retains the Department’s enforcement discretion to the maximum extent possible, and provides maximum flexibility to deal with a permittee’s changing financial circumstances.”

Response: The requirement to have financial capability is critical to the authorization to discharge under the permit per A.R.S. § 49-243(N). Therefore, this provision requires the Department to request that the permittee demonstrate continuing financial capability if there is reason to suspect that this is no longer the case. No change has been made to the rule.

Commenter – Scott Thomas, ASARCO: (Subsection (F))

“In proposed R18-9-A203(F), Asarco does not understand the need for the first sentence. Mechanisms for showing financial assurance typically have not been specified within APPs, so it is not clear why a permit amendment is necessary if the mechanism changes. Moreover, since financial information submitted to ADEQ is confidential, it is not clear what level of information would be included in any public notice. Asarco recognizes that this issue is also raised by language in the existing rules (R18-9-A211(D)(2)(c)), but has the same comments regarding the language in that section.”

Response: This is current rule language that has been moved to this Section. The primary reason for requiring an amendment for a changed financial mechanism is to ensure that the new mechanism provides an adequate financial capability demonstration. Financial information submitted by the applicant may be confidential, but the closure cost estimate and the type of financial mechanism employed are not. No change has been made to the rule.

Commenter – Scott Thomas, ASARCO: (Subsection (F))

“Not every significant permit amendment should necessitate a new financial capability demonstration for the entire facility. Many amendments deemed ‘significant’ under R18-9-A211(B) do not implicate financial considerations (e.g., allowing less stringent monitoring). Even things such as allowing the discharge of a new pollutant will not necessarily change the financial requirements to operate or close a facility. The requirement to submit a revised financial capability demonstration should apply only if the permit modification will have a significant impact on the cost of operating or closing a facility.”

Response: Because APPs are not renewed on a regular basis, there is no structure for periodic review of financial capability throughout the term of the permit. The Department has added this requirement to ensure that financial status is reviewed, at a minimum, with each significant amendment of the permit. This requirement will apply regardless of whether the significant amendment is triggered by a complex modification to the facility or some other change that requires a significant amendment to the permit. No change has been made to the rule.

Commenter – Lucas Narducci & Michael Ford / Bryan Cave, BHP Copper: (Subsection (F))

“A permit amendment should only be required in the event a new mechanism is put into place on the applicant’s own initiative (without Director approval under the substitution provision, subsection E), or if closure costs significantly increase, to the point additional financial assurance is necessary.

BHP also requests ADEQ’s confirmation of our understanding that the new provisions will not apply to pending applicants and permittees, and that ADEQ does not intend to apply any changes to the demonstration provisions retroactively to existing applicants and permittees who have already provided acceptable financial assurance to ADEQ (excepting, of course, situations where ADEQ has discretion to require additional financial assurance due to impairment of the permittee/applicant’s existing financial assurance demonstration). Many existing applicants and permittees conducting business in the state have relied on the existing provisions for years, and have consistently demonstrated financial capability with respect to their operations in the state, and the proposed revisions may substantially and unfairly increase their costs of providing financial assurance.”

Response: The Department intends for these requirements to apply to all permittees upon the effective date of the rule. For existing permittees, the requirement to make a new demonstration of financial capability will apply at the time a significant amendment application is submitted. See response to previous comment. No change has been made to the rule.

R18-9-A204. Contingency Plan

Commenter – Todd Williams, Flood Control District of Maricopa County:

“The terms violation and exceedance seem to be used interchangeably. The term exceedance seems more appropriate in relation to a specific standard or alert level. The term violation implies guilt even though the real problem may be with the standards in the first place. Standards may have been improperly set or insufficient data was available to make an accurate standard.”

Response: The terms “violation” and “exceeded” are not used interchangeably in this subsection. The former is used in connection with AWQS, AQL, DL, or other permit conditions that may be violated. The latter term is used solely for Alert Levels. Exceeding an AL is not a violation because it is simply an early warning of the need for contingency action before a situation at the facility rises to the level of a violation. No change has been made to the rule.

Commenter – Sydney Hay, Arizona Mining Association: (Subsections (A)(5) and (D))

“The AMA continues to believe that these provisions should be removed from the APP rules. As noted in prior comments, ADEQ does not have statutory authority under the APP program to impose APP contingency requirements for imminent and substantial endangerment to the public health or the environment. Rather, ADEQ’s authority under the APP program is limited to ensuring compliance with BADCT and aquifer water quality standards at an applicable point of compliance or ambient water quality if the aquifer does not meet aquifer water quality standards at the time of permit issuance. See A.R.S. § 49-243(B). The APP program has authority over discharges that may impact ground-water quality at an applicable point of compliance. It does not have authority over discharges based solely on their potential to endanger public health or the environment, nor is it clear what constitutes an imminent and substantial endangerment to human health or the environment, and this vagueness makes it difficult to develop a meaningful contingency plan.

ADEQ’s response to comments on the 1st draft of the proposed APP rule revision is that the language in R18-9-A204.A.5 and R18-9-204.D is based on A.R.S. § 49-243(K)(8) and A.R.S. § 49-261(A). Neither of these statutory provisions supports ADEQ’s position. In the first place, A.R.S. § 49-243(K)(8) provides that ADEQ may prescribe in a permit such other terms and conditions as ADEQ deems necessary to ensure compliance with A.R.S. Title 49, Chapter 2, Article 3 (APP permit program). The APP program focuses on ensuring compliance with BADCT and with meeting aquifer water quality standards at an applicable point of compliance or ambient water quality if the aquifer does not meet aquifer water quality standards at the time of permit issuance. See A.R.S. 49-243(B). Requirements for permittees to respond to conditions posing imminent and substantial endangerment to human health or the environment in APP permits are beyond ADEQ’s statutory authority. See A.R.S. § 41-1052(C)(5).

A.R.S. § 49-261(A) does not support in any way ADEQ’s claim to have statutory authority to impose conditions in APP permits to respond to conditions posing imminent and substantial endangerment. This section is contained in the water quality enforcement section and gives ADEQ the authority to issue a compliance order if it determines, among other things, that a person is creating an imminent and substantial endangerment to the public health or the environment. This does not authorize ADEQ to impose related conditions in APP permits.”

Response: The Department does not agree with the comment. A.R.S. § 49-203(A)(7) states that the Director shall: “[a]dopt, by rule or as permit conditions, such discharge limitations, best management practice standards, new source performance standards, toxic and pretreatment standards and such other standards and conditions as are reasonable and necessary to carry out the permit programs and regulatory duties described in paragraphs 2 through 5 of this subsection.” Additionally, the Department is authorized to address imminent and substantial endangerment to human health or the environment in an APP under A.R.S. § 49-261(A). No change has been made to the rule.

R18-9-A205. Alert Levels, Discharge Limitations and AOLs

Commenter – Sydney Hay, Arizona Mining Association: (Subsection (A)(2))

“AMA continues to believe that this subsection should be deleted from the APP rules. As we noted in previous comments, the methods that have been used for establishing alert levels for so called ‘indicator’ parameters are flawed and often are based on ambient data resulting in an alert level that may have no relation to potential exceedances of numeric aquifer water quality standards in the future. In addition, the AMA understood that the establishment of alert levels for parameters without numeric aquifer water quality standards would only be established consistent with ADEQ’s substantive policy statement entitled ‘Using Narrative Aquifer Water Quality Standards to Develop Permit Conditions for Aquifer Protection Permits.’ The language in R18-9-A205.A.2 is inconsistent with this substantive policy statement. For these reasons, the AMA believes there is no statutory justification for the establishment of alert levels for ‘indicator’ parameters, except to protect down-gradient uses consistent with ADEQ’s substantive policy statement mentioned immediately above. See A.R.S. § 41-1052(C)(5).”

Response: R18-9-A205(A)(2) has not been changed in this rulemaking. In practice, R18-9-A205(A)(2) has been useful to the Department in many instances to reduce the number of pollutants monitored, to reduce the frequency of monitoring events for a longer list of pollutants that have AWQS, or to monitor for an indicator that is less costly to analyze than its AWQS counterpart. If this provision were deleted, the Department would have less flexibility in accepting applicants’ proposals for monitoring plans.

It is true that the Department’s policy statement regarding narrative aquifer water quality standards uses ALs. However, the policy does not preclude the use of ALs in monitoring of constituents without numeric AWQS and, therefore, the rule is not inconsistent with the policy.

R18-9-A205(A)(2) is consistent with A.R.S. § 49-223(G) where it is specifically stated that indicator parameters may be specified in APPs. No change has been made to the rule.

Commenter – Sydney Hay, Arizona Mining Association: (Subsections (C)(1) and (2))

“The language in R18-9-A205.C.1 and .2 should be deleted. This language is inconsistent with the relevant statutory provisions in A.R.S. § 49-243(B)(2) and (3). See A.R.S. § 41-1052(C)(5). Both A.R.S. § 49-243(B)(2) and (3) establish a causation requirement as related to potential exceedances of aquifer water quality standards or of ambient groundwater quality under the ‘no further degradation’ standard. The exceedance of an aquifer water quality standard or AQL at the point of compliance is not a violation per the statutory language in A.R.S. § 49-243(B)(2) and (3).

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unless the exceedance was caused or contributed to by pollutants discharged from the facility. An exceedance of an AQL at the point of compliance cannot be considered as an automatic permit violation as suggested under ADEQ's proposed language in R18-9-A205.C.1 and .2 but rather should initiate an evaluation of whether the exceedance was caused or contributed by pollutants discharged from the facility."

Commenter – Angela Lucci, City of Surprise:

"The permittee is assumed to be at fault if an AQL is exceeded. It is possible that the actions of adjacent property owners or others may have caused the degradation of the aquifer, and the issuance of an NOV would impair the reputation of the permittee who is not at fault. We recommend that the rule be stated: C.1. 'If a facility exceeds an AQL set at an Aquifer Water Quality Standard, the facility shall be evaluated to determine the source of the discharge and whether the discharge further degraded the aquifer.'"

Commenter – Scott Thomas, ASARCO:

"Subsections 1 and 2 of this section are unnecessary in light of existing statutory language. Moreover, to the extent they announce enforcement interpretations, these statements do not belong in a section dealing with establishment of permit limits.

If these unnecessary provisions are retained, the language is awkward in several respects and should be modified in two ways: (a) A 'facility' (basically, a thing or operation from which there may be a discharge, see A.R.S. § 49-201) will not 'exceed' an AWQS. The reference should be to 'discharges from a facility that result in exceedances' of an AWQS or AQL; and (b) In subsection (1), the word 'at' should be replaced with the phrase 'equal to,' to enhance clarity."

Response: The Department disagrees. A.R.S. § 49-243(B) requires a permittee to demonstrate that a pollutant discharged from a facility will not result in an exceedance of a AWQS. It is not the Department's responsibility to make this demonstration. Subsection (C) has been revised from what happens in the event an AQL has been exceeded to instead reflect how the Department will establish AQLs in a permit.

C. AQLs. The Department may prescribe an AQL in an individual permit to ensure that the facility continues to meet the criteria under A.R.S. § 49-243(B)(2) or (3).

- 1. If the concentration of a pollutant in the aquifer does not exceed the Aquifer Water Quality Standard, the Department shall set the AQL at the Aquifer Water Quality Standard.**
- 2. If the concentration of a pollutant in the aquifer exceeds the Aquifer Water Quality Standard, the Department shall set the AQL higher than the Aquifer Water Quality Standard.**

R18-9-A209. Temporary Cessation, Closure, and Post-closure

Commenter – Lucas Narducci & Michael Ford / Bryan Cave, BHP Copper: (Subsection (B))

"ADEQ's discussion in the Explanation of its perceived site investigation authority indicates ADEQ 'believes it has the responsibility to evaluate information about the entire site....' (11 A.A.R. at 154). This is problematic to the extent ADEQ believes its APP authority extends beyond closure of permitted or otherwise jurisdictional facilities. For example, it would obviously be inadvisable for ADEQ to assert it has APP authority to require the investigation of a 100 acre site that is closing but a single drywell, its only APP facility. ADEQ's APP closure jurisdiction extends as far as its permitting jurisdiction, and no further. This interpretation is consistent with the statutory provision for closure, which provides that the alternatives to clean closure are obtaining an APP, or amending an existing APP (A.R.S. § 49-252.E). Since only jurisdictional, non-exempt APP facilities can be permitted, obviously only such facilities can be closed. Nothing in the statute indicates closure authority is broader. Therefore, because APP program jurisdiction is limited to certain non-exempt discharging facilities, any required closure investigation should be similarly limited to discharging facilities covered by an APP permit or otherwise within APP jurisdiction.

In addition, because the APP program is focused on threats to groundwater, rather than threats to persons on the surface, BHP believes it is more consistent with ADEQ's APP statutory authority if impacted soil subject to APP regulation were limited to soil that exhibits a leach characteristic that has the potential to cause a violation of AWQS at the point of compliance. Soil that does not meet this criteria should not mandatorily be subject to further required investigation under the APP program. It is not clear that ADEQ's authority extends to situations where only SRL exceedances (and not GPL exceedances) are at issue, since such levels are designed to protect against threats to the surface environment, not aquifers. At closure, operators may have a variety of options to address impacted soil outside of the APP program, which options should continue to remain available. Should the permittee and ADEQ agree that other areas will be included in the APP closure process, that should remain an available option."

Response: The commenter expressed concern about implications of overreaching authority in a part of the Department's discussion in the "Explanation" with the rule that states "...the Department has the responsibility to evaluate information about the entire site...." The statement is not meant to imply that the Department intends to go beyond APP statutory authority in evaluating closure. In this instance the term "site" is used in the sense of referring to the APP facility under consideration for closure. Use of the term "site" is not meant to imply that non-APP facilities are included in a facility's closure site investigation plan. The Department agrees that the statute sets out very clear limits about what facilities are under the agency's purview for closure under APP.

Commenter – Sydney Hay, Arizona Mining Association: (Subsection (B)(1))

“AMA strongly opposes ADEQ’s new proposal to require the submittal and approval of a site investigation plan before submittal of any type of closure plan. There is no statutory authority for this new proposal and it should be removed from the APP rules. Additionally, this proposal purports to create an obligation to study the extent of contamination in soil and groundwater, even if the extent of the contamination has no reasonable relation to whether the facility would exceed aquifer water quality standards or further degrade an aquifer at the applicable point of compliance (see definition of ‘clean closure’ at A.R.S. § 49-201(5)). Another deficiency with this proposal is that there are no criteria to guide ADEQ in reviewing and approving so-called ‘site investigation plans.’ The lack of criteria give ADEQ unlimited control in dictating the content of such plans, including the associated costs and other regulatory burdens which could escalate and change depending on the agency’s current notions or impulses. There is also language in R18-9-A209.B.1.b that gives ADEQ the authority to require the permittee to submit additional information but again there are no criteria to limit this authority. It also is unclear what is meant by the phrase ‘contaminated medium.’ The site investigation plan proposal should be removed from the APP rules. AMA also continues to oppose ADEQ’s proposal to require closure plans to include the lateral and vertical extent of contamination in soils and groundwater and the analytical results to support the determination. The proposal raises several unanswered questions. Additionally, it would not always be prudent to require soil sampling, especially if the area is located a substantial distance from the applicable point of compliance or if depth to groundwater is substantial. AMA respectfully requests that the language be deleted or modified to provide that such information is only required if determined to be necessary to demonstrate that the facility will not further degrade water quality at the applicable point of compliance.”

Commenter – Scott Thomas, ASARCO: (Subsection (B)(1))

“(1) First, as noted by AMA, there is no basis in statute for ADEQ requiring such an investigation. In the preamble, the Department equates this requirement to an administrative completeness review. See 11 A.A.R. at 154. However, an administrative completeness review, which merely determines if all required components of an application are present (without reviewing their substance), is hardly comparable to the potentially massive investigation called for in the proposal. Moreover, unlike the proposed new investigation, administrative completeness review is specifically authorized by a statute (the licensing time frames statute, see A.R.S. §§ 41-1072 & 1074).

(2) Even if the Department were authorized to require permittees to conduct a pre-closure site investigation, the scope of the proposed investigation is vastly overbroad, especially as it might relate to a mining site covering multiple square miles. First, no distinction is drawn between natural ‘contamination’ and contamination that may have been caused by the permittee. Second, the investigation requirement could be interpreted to extend to areas that were not covered by the APP-permitted activities, resulting in the odd situation that the APP program would address at closure things that it could not regulate during the life of the facility. Third, the reference to SRLs in the preamble is very disturbing, as an exceedance of a SRLs may not result from, or result in, a ‘discharge,’ the fundamental activity that the APP program regulates. In fact, even exceedances of GPLs (also mentioned in the preamble) may not result from a discharge, or have any effect on groundwater at an APP point of compliance.

The preamble states that the rationale for adding this requirement comes from review of closure plans that were insufficient to determine if clean closure would be achieved. See 11 A.A.R. at 154. If this is the case, and if this concept is retained at all, then any rule language should be focused on the conditions necessary to achieve clean closure: reduction of further discharge and maintenance of standards (or AQLs, if set higher than the AWQS) at the POC(s). See A.R.S. § 49-201(5). Furthermore, what if a permittee is not seeking to demonstrate clean closure? At a mining site, it is likely that post-closure care will be necessary, so the permittee may not even attempt to demonstrate clean closure. In that case, will the same extensive investigation be called for as if a permittee were trying to demonstrate clean closure?

(3) Some of the language used in the proposal is quite vague, which enhances our concern with the proposal. For example, ‘contamination’ is not defined with respect to soil or groundwater. For example, is groundwater ‘contaminated’ only if it exceeds an AWQS? Or will any increase in ambient levels be construed as ‘contamination’? This latter interpretation would be antithetical to the very concept of a discharge permit such as an APP, which contemplates the possibility of some changes in groundwater quality, but it might be possible to form such an interpretation under the vague language of the proposal. Given that permittees would be required to identify the lateral extent of contamination, they could end up studying a massive area, rather than focusing on the critical concepts of the APP program: maintaining standards at the POC(s) and controlling future discharge upon closure.

In a similar vein, ‘contaminated media’ is an undefined and vague term.

(4) Finally, it is unclear if ADEQ intends to charge applicants for its costs in reviewing this pre-closure site investigation. There is no mention of fees in proposed R18-9-A209(B)(1), but ADEQ can collect fees for closure plan review and it is unclear if the Department would consider review of the pre-closure plan to be part of the review of the closure plan. Asarco’s position is that the imposition of fees for review of these proposed new reports is not allowed because it is not authorized in the fee rule or elsewhere (not surprising, given that the investigation itself is not authorized anywhere in statute).”

Response: It is implicit in the statutory requirement for the Department to approve closures that the owner or operator prepare information to document the status of the facility and characterize past and potential future pollutant

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discharge. Without a rule requirement for Department review and approval of the scope of the data collection, the owner or operator is limited in the ability to put together information that is responsive to the criteria that need to be addressed to achieve closure. Currently, without this step, a facility presented for closure without complete information about the site must be refused clean closure approval by the Department and the Department must require application for an individual permit. Most applicants seeking closure approval currently submit some form of site investigation plan for Department approval even though the step is not formally recognized in rule. In the Department's experience, applicants who do not communicate with the Department about site investigations often do not collect enough data and sometimes waste money on irrelevant studies.

The authority for including a site investigation plan stems from the necessity for a facility owner or operator to submit a "complete closure plan" under A.R.S. § 49-252(C), to demonstrate to the Director that a facility either complies with clean closure requirements or meets APP permitting requirements including BADCT for closure design (see A.R.S. § 49-252(B), (C), (E) and A.R.S. §§ 49-201, 49-203(A)(4), 49-203(10), 49-205, 49-207, and 49-243(K)(6)). The Department recognizes that if the information listed in R18-9-209(B)(2) is not provided in substantial detail the decision about whether or not clean closure is achieved is not possible. By including a site investigation plan as a component of the complete closure plan, the Department ensures that the owner or operator will collect and supply the Department with complete technical information for this decision-making. When approaching closure, a facility owner or operator must assess the facility to determine the extent of pollutants present and what the pollutants' fate may be considering the closure activities and final design of the closed facility. A facility owner or operator can satisfy this requirement by summarizing facility records and site data already collected. In other cases the facility owner or operator may rely substantially on studies contemplated but not yet conducted, i.e., planned activities. Some facilities may have such complete records regarding the discharge that it is unnecessary to conduct additional site studies. In such instances, the site investigation plan will be a summary of the information in the records. However, in instances where soil and/or groundwater may contain significant quantities of pollutants that may result in exceeding an Aquifer Water Quality Standard at some point in the future, the Department needs good data regarding potential fate of the pollutants to allow the agency to make judgments about closure requirements.

The commenters questioned what criteria the Department will use for approval for a site investigation plan. The criteria are given in the proposed rule R18-9-A209(B)(2)(a). Furthermore, the scope of any investigation associated with a facility's closure design and the decision about clean closure would be subject to the statutory criteria for closure and clean closure including A.R.S. §§ 49-201(5), 49-201(7), 49-243(K)(6), and 49-252. These criteria focus the decision about closure on four items:

1. Have closure requirements specified in a permit been met?
2. Has discharge ceased to the "greatest degree practicable?"
3. Can a future violation of AWQS occur at the point of compliance?
4. Is post-closure monitoring or maintenance necessary?

The commenter suggests that with regard to soil remediation levels (SRLs) the Department should only apply Groundwater Protection Levels (GPLs) in the context of an APP facility closure because the GPLs are the only soil standards that are developed to protect groundwater. The closure plan should take into account the standard of "clean closure" as defined at A.R.S. § 49-201(5) and the four criteria described above. Facility closures could involve more than one approach to address contaminated soils. The Department will evaluate the plans submitted under this rule using applicable clean-up standards for soil and groundwater. The commenter also objected to the use of the term "contaminated medium" in R18-9-A209(B)(1)(a). The rule has been clarified as follows:

3. ~~a.~~ *The permittee person shall submit a closure plan for Director approval within 90 days following the notification of intent to cease operations with the applicable fee established in 18 A.A.C. 14. ~~The~~ A complete closure plan shall ~~describe~~ include:*
 - a. *A site investigation plan that includes a summary of relevant site studies already conducted and a proposed scope of work for any additional site investigation necessary to identify:*
 - i. *The lateral and vertical extent of contamination in soils and groundwater, using applicable standards;*
 - ii. *The approximate quantity and chemical, biological, and physical characteristics of each waste, contaminated water, or contaminated soil proposed for removal from the facility;*
 - iii. *The approximate quantity and chemical, biological, and physical characteristics of each waste, contaminated water, or contaminated soil that will remain at the facility; and*
 - iv. *Information regarding site conditions related to pollutant fate and transport that may influence the scope of sampling necessary to characterize the site for closure;*
 - b. *A summary describing the results of a site investigation and any other information used to identify:*
 - i. *The lateral and vertical extent of soil and groundwater contamination, using applicable standards, and the analytical results that support the determination;*
 - ~~i-ii.~~ *The approximate quantity and chemical, biological, and physical characteristics of each material to be removed from the facility scheduled for removal;*
 - ~~ii-iii.~~ *The destination of the materials to be removed from the facility and documentation that the destination is approved to accept the materials;*

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- ~~iii-iv.~~ The approximate quantity and chemical, biological, and physical characteristics of each material that remains at the facility; and
 - ~~iv.~~ The method to be used to treat any material remaining at the facility;
 - ~~v.~~ The method to be used to control the discharge of pollutants from the facility;
 - ~~vi.~~ Any limitations on future land or water uses created as a result of the facility's operations or closure activities;
 - ~~vii.~~ The methods to be used to secure the facility;
 - ~~viii.~~ An estimate of the cost of closure;
 - ~~ix.~~ A schedule for implementation of the closure plan and the submission of a post closure plan; and
 - ~~x.v.~~ Any other relevant information the Department determines ~~to be~~ is necessary;
 - c. A closure design that identifies:
 - i. The method used, if any, to treat any material remaining at the facility;
 - ii. The method used to control the discharge of pollutants from the facility;
 - iii. Any limitation on future land or water uses created as a result of the facility's operations or closure activities and a Declaration of Environmental Use Restriction according to A.R.S. § 49-152, if necessary; and
 - iv. The methods used to secure the facility;
 - d. An estimate of the cost of closure;
 - e. A schedule for implementation of the closure plan and submission of a post-closure plan if clean closure is not achieved; and
 - f. For an implemented closure plan, a summary report of the results of site investigation performed during closure activities, including confirmation and verification sampling.
 - b. Upon receipt of a complete closure plan, the Director shall:
 - i. Provide written notification of the closure as specified in R18-9-108 and
 - ii. If the proposed closure plan does not achieve clean closure, publish a Notice of Preliminary Decision for a permit amendment or issuance of an individual permit as specified in R18-9-109.
- 2-4. Within 60 days of receipt of a complete closure plan, the Department shall determine whether the closure plan achieves clean closure.
- a. If the implemented complete closure plan achieves clean closure, the Director shall:
 - i. If the facility is not covered by an Aquifer Protection Permit, send the person a letter of approval ~~to~~ the permittee; or
 - ii. If the facility is covered by an Aquifer Protection Permit, send the person a Permit Release Notice issued under subsection (C)(2)(c).
 - b. If the implemented complete closure plan ~~does~~ did not achieve clean closure, the ~~permittee~~ person shall submit a post-closure plan under subsection (C) and the following documents within 90 days from the date on the Department's notice or as specified under A.R.S. § 49-252(E):
 - i. An application for an individual permit, or
 - ii. A request to ~~modify~~ amend a current individual permit to address closure activities and post-closure monitoring and maintenance at the facility.
3. The Director shall require implementation of the closure plan as a permit condition.

Use of the term "contaminated" connotes exceeding an Aquifer Water Quality Standard, Surface Water Quality Standard, or Soil Remediation Standard, as applicable.

R18-9-A209(B)(1)(a) Need to consider site conditions. The commenter raised the point that it might not always be prudent to conduct soil sampling, considering that an area might be far removed from the point of compliance or the depth to groundwater might be great. The Department agrees that there are instances in which site conditions might affect the scope of soil sampling that is necessary at a site. A new subsection has been added to subsection (B)(1)(a) (now (B)(2)(a)) as follows:

- iv. Information regarding site conditions related to pollutant fate and transport that may influence the scope of sampling necessary to characterize the site for closure.

R18-9-A209(B) Fees for closure plan review. The commenter states that it is unclear whether the Department intends to charge fees for review of a site investigation plan. The Department has formulated the rule so that information in the site investigation plan and the results of the site investigation become a part of the closure plan. The review of the site investigation plan as a component of the review of the closure plan under a permit or a component of a clean closure plan is a "water quality protection service" as described in either R18-14-101(8)(c) or (d), for which fees are collected under A.R.S. § 49-241.02(A)(3).

Commenter – Scott Thomas, ASARCO: (Subsection B)(2)(b)(i))

"The phrase 'The method that will be used to treat any material remaining at the facility' implies that any remaining material must be treated in some fashion. (This tracks existing language that is being relocated in the proposal.) At a mining site, material remaining on site will not all be 'treated' at closure (e.g., some might be capped). This is likely

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true at non-mining sites as well. Asarco does not believe it was ever the Department's intent under the APP program to mandate treatment of any materials remaining on-site. Therefore, Asarco suggests that the language be reworded as follows: 'The method, IF ANY, that will be used to treat any material remaining at the facility.' This language at least recognizes that treatment is not always necessary."

Response: The Department agrees and has revised subsection (B)(2)(b)(i) as suggested.

R18-9-A211. Permit Amendments

Commenter – Sydney Hay, Arizona Mining Association:

"We appreciate the clarification in the proposed rulemaking that the proposed language in R18-9-A211.A.3 is intended to clarify that a permit amendment only becomes effective and final after all appeals have been exhausted.

The AMA continues to oppose the new language in R18-9-A211.F that creates some type of 'anti-backsliding' concept. Anti-backsliding is not an APP concept rather it is a concept from the federal Clean Water Act that is frequently misunderstood and misapplied. We believe that ADEQ's new language will create a host of unanswered questions (e.g., when is a discharge control technology 'less stringent,' what is meant by a change in the industrial classification of the facility, etc.) and will eliminate the flexibility for ADEQ to address changes in technology and other factors or circumstances as the APP program continues to develop. We also believe that there is no statutory justification for the concept and that BADCT concepts are more than adequately addressed in the statute."

Response: The Department added this provision because there have been a number of instances where a permittee has requested a change in technology that would provide a lesser level of pollutant discharge reduction after the BADCT has been determined and a permit has been issued. A.R.S. § 49-243(B)(1) requires the use of technology to provide the greatest degree of discharge reduction achievable, up to and including eliminating the discharge of pollutants through the application of the Best Available Demonstrated Control Technology (BADCT). Allowing a permittee to reduce their treatment technology would be in direct conflict with the statute. To clarify the intent of this provision, the term has been removed from the Preamble and the rule has been revised as follows:

F. The Director shall not amend or reissue a permit to allow use of a discharge control technology that provides a lesser degree of pollutant discharge reduction that is less stringent than the BADCT established in the individual Aquifer Protection Permit previously issued for a facility, unless:

- 1. The industrial classification of the facility has changed so that a new assessment of BADCT is appropriate.*
- 2. The pollutant load has decreased or the pollutant composition has changed significantly to warrant a new assessment of the BADCT.*
- 3. The Director approves a corrective or contingency action that necessitates a change in the treatment technology, or*
- 4. The approved discharge control technology is not operating properly due to circumstances beyond the control of the owner or operator.*

Commenter – Scott Thomas, ASARCO: (Subsection (C)(7))

"In proposed A.A.C. R18-9-211(C)(7), the word 'AQLs' should be added after the phrase 'alert levels.' The method of calculating AQLs also may be set forth in a permit, and this change also would mirror the language in proposed A.A.C. R18-9-211(D)(2)(h)."

Response: The rule has been revised as suggested.

Commenter – Scott Thomas, ASARCO: (Subsection (D)(2)(h))

"In proposed A.A.C. R18-9-211(D)(2)(h), the following language should be added: ', other than a calculation covered in A.A.C. R18-9-211(C)(7).' This will make it clear which type of amendment each calculation of an alert level, AQL or other permit limit constitutes."

Response: It is not necessary to make the change because the only time an "other amendment" would be necessary is when the calculation is not covered under R18-9-211(C)(7). No change has been made to the rule.

R18-9-A212. Permit Transfer

Commenter – Angela Lucci, City of Surprise: (Subsection (B))

"Item B. The word 'operator' is misspelled.

Item B.1.1.iv. The word 'operator' is misspelled."

Response: The spelling error corrections have been made.

R18-9-A213. Permit Suspension, Revocation, Denial, or Termination

Commenter – Sydney Hay, Arizona Mining Association: (Subsection (A)(3))

"This language gives ADEQ the authority to suspend or revoke an individual permit for the failure to comply with any applicable provision of the APP statute or rules or with any permit condition. This language should be clarified

(either in rule or in the preamble) to provide that ADEQ's authority would only be triggered if a 'significant' failure to comply has occurred (i.e., a failure that would cause or contribute to a violation of an aquifer water quality standard at a point of compliance). ADEQ should not be given the authority to suspend or revoke permits based on violations of minor permit conditions. Alternatively, the language simply should be deleted because significant failures are already addressed under R18-9-A213.A.3."

Response: This is existing rule language that has not been changed in this rulemaking. The language is permissive and does not require the Department to revoke or suspend the permit. Revisions to the rule have added the process for notification and interaction with the permittee before the Department takes such an action. However, the Department does not intend to limit the basis for taking such action, if necessary. No change has been made to the rule.

Commenter Sydney Hay, Arizona Mining Association: (Subsection (A)(6))

"AMA still continues to oppose this new basis for allowing ADEQ to suspend or revoke an individual permit, even though ADEQ has changed the time period from three years to five years. Although AMA recognizes that the language in R18-9-A213.A is permissive, it still gives ADEQ authority to take action under the circumstances described. Accordingly, the circumstances should only be those that would justify permit suspension or revocation. The simple fact that a facility has not yet been built should not be justification for ADEQ to revoke or suspend the permit. What has been the offending action? As we have already noted, the cost to prepare and submit an individual permit application and then to negotiate the application with ADEQ is substantial and a permit should not be suspended simply because the permitted facility is not constructed within an arbitrary timeframe established in rule. There continues to be no rationale, of which we are aware, for ADEQ's proposed language. If ADEQ's rationale is that the design or BADCT requirements may need to be updated, this can be simply and efficiently addressed through a permit amendment as ADEQ has already proposed in R18-9-A211.B.6."

Response: The rule does not provide for suspension or revocation simply based simply on the fact that the permittee failed to construct the facility within five years of permit issuance. The rule includes additional criteria in R18-9-A213(A)(6)(a) and (b) that would justify suspension or revocation including failure to amend the permit as recommended by the commenter. No change has been made to the rule.

Scott Thomas, ASARCO: (Subsection (C)(1))

"Should this section also include a reference to A.A.C. R18-9-A209(B)(3)(a)(ii), which authorizes the Department to issue a permit release notice if the person achieves clean closure? The current cross-citation only references the permit release notice found in the post-closure section of the rules."

Response: The Department agrees. The rule has been revised as follows:

C. The Director shall terminate an individual permit if each facility covered under the individual permit:

- 1. Has closed and the Director issued a Permit Release Notice under R18-9-A209(C)(2)(c) or R18-9-A209(B)(3)(a)(ii) for the closed facility, or**
- 2. Is covered under another Aquifer Protection Permit.**

R18-9-A214. Requested Coverage Under a General Permit

Commenter – Scott Thomas, ASARCO:

"As proposed, this section seems to contemplate an entire facility shifting from individual to general permit coverage. It should be made more explicit that a single discharging facility or group of facilities may switch to general permit coverage, leaving additional facilities at the same site to be covered by an individual permit."

Response: The Department agrees and made the following change:

- B. The individual permit is valid and enforceable with respect to a discharge from each facility until the Director determines that the discharge from each facility is covered under a general permit.**

ARTICLE 2. AQUIFER PROTECTION PERMITS – INDIVIDUAL PERMITS

PART B. BADCT FOR SEWAGE TREATMENT FACILITIES

R18-9-B201. General Considerations and Prohibitions

Commenter – Sydney Hay, Arizona Mining Association: (Subsection (C))

"In prior comments on ADEQ's proposed APP rule revisions, AMA requested that the proposed requirement to ensure that a sewage treatment facility is operated by a person certified under A.A.C. R18-5-105 for the grade of the facility be removed from the revised APP rules for several compelling reasons. First, we emphasized that it is inappropriate to create double jeopardy in the regulatory context by requiring in one set of regulations compliance with another set of regulations. Second, the certified operator requirements stand on their own and can be enforced by ADEQ outside of the APP program. Third, this requirement violates the language in A.R.S. § 49-203(D) that requires ADEQ to integrate all of its water quality programs and to avoid duplication and dual permitting and dual regulation to the maximum extent practicable. Fourth, the absolute requirement that a certified operator operate sewage treatment facilities is too broad, because many sewage treatment facilities are exempt from the certified operator require-

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ments (see A.A.C. R18-5-102.B). Fifth, the existing rule language in R18-9-A202.B already addresses the certified operator requirement.

ADEQ responded to only two of the AMA concerns. For instance, with respect to the issue of double jeopardy, ADEQ simply states, without any explanation, that it does not believe the language creates a ‘double jeopardy’ situation (see 11 A.A.R. at 156). ADEQ also supports its position by referring to language in the drinking water regulations that requires water suppliers to provide for certified operators. The drinking water statute, however, specifically authorizes ADEQ to establish rules for the classification of drinking water systems and for certifying operating personnel and provides that the requirements apply to all public drinking water systems. A.R.S. § 49-352.A. The APP statute, however, does not contain any such authorization. It is therefore inappropriate and legally indefensible to make compliance with operator certification a potential APP violation. ADEQ’s proposed language is not only beyond its statutory authority but it also is directly contrary to statutory language in A.R.S. § 49-203(D). See A.R.S. § 41-1052(C)(5).

ADEQ also responded that it does not interpret the exemptions listed in R18-5-102(B) as applying to sewage treatment facilities addressed in 18 A.A.C. 9, Article 2, Part B. This interpretation, however, should be left to individual cases and should not simply be made as a broad sweeping statement without knowledge of individual circumstances. ADEQ’s proposed requirement to ensure compliance with separate regulations through provisions in the APP regulations should be removed.”

Response: The Department disagrees with the commenter that the certified operator provision creates a “double jeopardy” situation. “Double jeopardy” is a constitutional limit on the government’s prosecution of the same individual for the same crime twice and therefore does not apply as suggested. To the extent the commenter believes the provision is dual regulation, the Chapter 5 provisions list the requirements to obtain certification while the Chapter 9 provisions regulate owners and operators of facilities that must be operated by persons who have obtained certification under Chapter 5. Further, none of the exemptions under R18-5-102 apply to sewage treatment facilities subject to individual permitting requirements under this rule. Additionally, if a facility is exempt from the requirements of Chapter 5, this provision would not apply. Finally, the language of R18-9-A202(B) addresses the application for an individual permit, in contrast to this provision, which requires the sewage treatment facility to be operated by a certified operator throughout the term of the APP. The proper operation and maintenance of the sewage treatment facility is critical to compliance with the permit’s conditions in order to protect groundwater quality. No change has been made to the rule.

Commenter – Dorothy O’Brien – City of Peoria: (Subsection (F))

“This sections states that ‘a person shall not bypass or release sewage or partially treated sewage that has not completed the treatment process from a sewage treatment facility.’ The City proposes an addition that allows a wastewater treatment system to divert influent if facilities downstream are notified and can handle the additional flow during unusual events and the collection system has the capacity to handle the intermittent flow. Also, this precludes the discharge due to an emergency situation. The City recommends adding language identifying the required procedure for emergency situations.”

Response: The proposed rule language encompasses the situation described by the commenter. The critical phrase is “sewage that has not completed the treatment process from a sewage treatment facility [underline added].” This language does not limit treatment to a specific sewage treatment facility, but expresses the Department’s goal of ensuring that the wastewater is fully treated by a sewage treatment facility operating in accordance with the provisions of a valid Aquifer Protection Permit. No change has been made to the rule.

Commenter – Angela Lucci, City of Surprise: (Subsection (F))

“If a weir exceeds its loading rate during a storm event, for example, and overflows from one treatment process to another resulting in less than optimal treatment, without releasing onto the property, is this considered a release of sewage or partially treated sewage?”

Response: The test is whether the permittee has complied with all terms of the Aquifer Protection Permit. If the discharge meets the effluent limits in the permit and no intermediate performance limit relating to a unit process (if such a limit is expressed in the permit) or other permit restriction is exceeded, then there is no permit violation. No change has been made to the rule.

Commenter – Greg Brown, Specific Engineering LLC: (Subsection (I))

“This rule requiring setbacks for sewage treatment facilities should be removed from rule. A.R.S. § 49-104(B)(13) authorizes ADEQ to prescribe reasonable rules to prevent the transmission of sewage borne or insect born diseases. However, (I)(1) should remain that prescribes acceptable limits to noise and requires odor producing components to be enclosed in order to meet (J).

Before the adoption of the new rules in 2001, minimum setback requirements were found in ADEQ’s Engineering Bulletin No.11. The setback distance for plants 0.1 MGD and greater with noise and odor control was not provide. The set backs were reviewed on each individual project. Many plants were approved with a minimum setback of 100 feet. These plants also had plans for expansion based on this minimum setback. Even though these plant sites went

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through proper zoning and held public meetings, ADEQ's new rules would not allow them to expand because the new rules required a 250 foot setback for plants 0.1 – 0.5 MGD and 350 foot setback for plants greater than 1.0 MGD.

ADEQ has stated that since this requirement has been used in the past, it should remain in the new rules. Although it was used in the past, it was only guidance and should remain as guidance."

Response: The noise limits and odor components are regulated by the set-back requirements in this Section. Taking away the setback requirements would remove the option for a permittee to have adequate distance from the nearest property line instead of requiring the use of odor and noise controls. The setbacks and noise and odor controls are authorized under A.R.S. § 49-104(A)(10), which "[p]rovide for the prevention and abatement of all water and air pollution including that related to particulates, gases, dust, vapors, noise, radiation, odor, nutrients and heated liquids in accordance with article 3 of this chapter and chapters 2 and 3 of this title."

Consistent with the 2001 rule and the previous guidance, the rule continues to provide an option for reduced setback distances if waivers are obtained from the neighboring property owners. This rule adds another option so that local authorities can adopt an ordinance that allows smaller setbacks. This option could be used for expansions of sewage treatment plants that fail to meet the current setbacks but local zoning may allow. No change has been made to the rule.

Commenter – Angela Lucci, City of Surprise: (Subsection (I))

"Are major modification and significant modification interchangeable terms?"

Response: No. A major modification is defined in A.R.S. § 49-201(20) and, presuming the commenter means a significant amendment, this term is defined in A.A.C. R18-9-A211(B).

Commenter – Dorothy O'Brien – City of Peoria: (Subsection (I)(1)(a))

"This section refers to minimizing noise levels to less than 50 decibels. Normal conversation is between 60 to 65 decibels, this level seems unreasonable for a plant that may need to operate a generator during infrequent power outages."

Commenter – Angela Lucci, City of Surprise:

"The City requests that 50 decibels be increased to 60 decibels, as the City code requirements are 60 decibels at all property boundaries."

Response: The criterion for a maximum sound level of 50 decibels on the A network of a sound level meter (50 dBA) at the property boundary of the sewage treatment facility has been in use in Arizona since at least July 1978, the date of publication of *Engineering Bulletin No. 11: Minimum Requirements for Design, Submission of Plans and Specifications of Sewage Works*. This limit is consistent with limits in noise regulations in other states for stationary commercial or industrial sources. Typically, for these sources, daytime limits are set at 55 decibels and nighttime limits at 50 decibels. Because a sewage treatment facility operates round-the-clock, the 50 decibel limit is appropriate as it would be impractical for a facility to change noise-limiting equipment two times a day to meet a dual standard. Also, research has shown that, given a background noise level of 50 decibels, persons speaking to each other at more than a 4-foot distance would have to raise their voices to communicate clearly (Webster, J.C., "Speech Interference by Noise," *Proceedings, Inter-Noise 74*, Institute of Noise Control Engineering, p. 558). No change has been made to the rule.

Commenter – Angela Lucci, City of Surprise: (Subsection (J))

"The words 'offensive' and 'persistent' are subjective, and we request that you strike Item J."

Commenter – Dorothy O'Brien, City of Peoria:

"This section states, '[t]he owner or operator of a sewage treatment facility shall not operate the facility so that it emits an offensive odor on a persistent basis beyond the setback distances specified in subsection (I).' The measurement of 'offensive odor' is not quantifiable. It is subjective to each person."

Response: The definitions of "offensive" and "persistent" are much less subjective than they may seem. The online dictionary FindLaw for Legal Professionals defines *offensive* as "causing displeasure or resentment, esp. contrary to a particular or prevailing sense of what is decent, proper, or moral." Webster's New World Dictionary, Second Edition, uses the following phrases to define *persistent*: "continuing to exist or endure," "lasting without change," "constantly repeated," and "continued." Together, the terms *offensive* and *persistent* indicate that the Department is concerned about odors that offend a reasonable person's sense of common decency on a continuing basis. A citizen subjected to such a continuing, obnoxious odor is entitled to some expectation of relief. No change has been made to the rule.

R18-9-B203. Engineering Plans and Specifications

Commenter – Angela Lucci, City of Surprise: (Subsection (D))

"As this rule pertains to engineering plans and specifications, 'design report' is unnecessary and should be struck. Additionally, authority to inspect is granted in R18-9-B202, Design Report, Item B."

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Response: The Department agrees and has changed the rule as follows:

~~B.C.~~ *The Department shall review engineering plans and specifications and a design report upon request by an applicant seeking a permit for a sewage treatment facility, regardless of its flow.*

~~C.D.~~ *The Department may inspect an applicant's facility without notice to ensure that construction generally conforms to the design report engineering plans and specifications, as applicable.*

Commenter – Greg Brown, Specific Engineering LLC: (Subsection (E))

“Change language to read ‘...permittee shall submit an ECC signed, dated, and sealed by an Arizona registered professional engineer in the State of Arizona in a format.’”

Response: The Department agrees and made the following change.

E. Before discharging under a permit, the permittee shall submit an Engineer's Certificate of Completion signed, dated, and sealed by an Arizona-registered professional engineer in a format approved by the Department, that confirms that the facility is constructed according to the Department-approved design report or plans and specifications, as applicable.

R18-9-B204. Treatment Performance Requirements for a New Facility

Commenter – Angela Lucci, City of Surprise: (Subsection (B))

“What is considered a new facility? Is a significant amendment a new facility?”

The reclaimed water standards described in 18 A.A.C. 11, Article 3 allow for the classification of reclaimed water based on water quality requirements that are less stringent than the BADCT requirements outlined in R18-9-B204 (B) (3) and (4). For example, if a person were to discharge only Class B quality reclaimed water as described in R18-11-306 for the appropriate Class B reclaimed uses, the total nitrogen in the discharge does not need to meet 10 mg/l as described in R18-9-B204 (B)(3) or the same pathogen removal requirements detailed in R18-9-B204 (B)(4). Please clarify whether or not the proposed changes in R18-9-B204 (D) would allow for design and construction of a facility that would produce water meeting the standards for Class B reclaimed water but not the BADCT requirements in R18-9-B204 (B)(3) and (4). If the design and construction would not be permitted in this situation with the proposed change and deletion of the phrase ‘...method of wastewater disposal or direct reuse...’ in R18-9-B204 (D), we recommend that this phrase is not deleted. We also recommend that the pathogen and nitrogen removal requirements for BADCT be based on the proposed discharge and the requirements of the discharge, including the following changes:

R18-9-B204 (B)(3). Delete this section and add ‘Total nitrogen in the treated wastewater meets the total nitrogen requirements for the intended discharge.’

R18-9-B204 (B)(4). Delete subsections (a) and (b) and add ‘Pathogen removal for the treated wastewater meets the pathogen requirements for the intended discharge.’

Commenter – Sydney Hay, Arizona Mining Association: (Subsection (D))

“We strongly oppose ADEQ’s suggestion to delete the existing language in this subsection. The language does not limit ADEQ’s authority, rather, it provides some clarification regarding what should be considered when authorizing alternatives.”

Response: One commenter asks what is considered a new facility? The definition of new facility is found in statute in A.R.S. § 49-201(22). Significant amendment is described in R18-9-A211(B). Any change to a facility that makes it a new facility would require a significant amendment (see R18-9-A211(B)(1)), but a significant amendment to a permit may be required by a change that did not rise to the level of creating a “new facility.”

One commenter points out that the reclaimed water quality standards allow for reuse in some instances of lesser quality reclaimed water than the BADCT requirements specify in R18-9-B204(B)(3) and (4). The Department intends the strikeout proposed in R18-9-B204(D) to conform our BADCT criteria in rule to those of the statute with respect to site-specific aspects of the facility. Many applicants have asked the Department to interpret the language of R18-9-B204(D) to imply that any facility supplying reclaimed water may use a less stringent BADCT design. The Department does not believe that a wastewater treatment technology that provides a lesser degree of treatment should be allowed as a general practice in new wastewater treatment plants simply because the wastewater is intended for reuse. However, the Department does believe that there are instances in which site-specific characteristics considered collectively for a facility may permit the use of less stringent BADCT at that site.

In describing site specific considerations for BADCT, A.R.S. § 49-243(B)(1) states, “[i]n determining best available demonstrated control technology, processes, operating methods or other alternatives, the Director shall take into account any treatment process contributing to the discharge, *the opportunity for water conservation or augmentation* and economic impacts of the use of alternative technologies, processes or operating methods on an industry-wide basis” (emphasis added to the portion of the statement that reflects site specific aspects for the Director’s consideration). The current rule language limits the scope of what could be considered. R18-9-B204(D) paraphrases the statute, substituting a list of items that includes “facility size, method of wastewater disposal or direct reuse, proportion of sewage to total industrial wastewater volume, and the seasonality of the service area for the sewage treatment facil-

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ity,” for the statutory phrase, “the opportunity for water conservation or augmentation.” The current rulemaking eliminates the list of criteria and relies on statutory language.

The requirements in R18-9-B204(B)(3) and (4) have been developed from industry-wide practices and are generally achievable by owners and operators of new facilities. The site-specific aspects of a facility that might enter into its BADCT are to be considered on a case-by-case basis. For wastewater treatment plants, with the exception of credit given for soil aquifer treatment, the deviation from the BADCT requirements established in R18-9-B204(B)(3) and (4) should be of limited frequency. Furthermore, allowing alternative, less stringent BADCT according to R18-9-B204(D) should be based on a facility’s entire picture of site-specific features, not on a single aspect such as the intention to deliver reclaimed water for a use that may qualify for lower quality reuse standards. No change has been made to the rule.

Commenter – Todd Williams, Flood Control District of Maricopa County: (Subsection (B)(4))

“How can ADEQ justify changing some of the E.Coli limits in the APP rule when there are discussions in the Impaired Waters Rule Development about how accurate/measurable the test can be? Is E.Coli measurable at the 23/100 mL or 15/100 mL level? I’m not aware of any labs that can accurately measure at such a low level.”

Response: In the current R18-9-B204, pathogen removal limits are expressed in terms of the level of fecal coliform bacteria present in the treated wastewater. The limits are expressed in units of colony forming units per 100 milliliters (cfu/100 ml). In this rule, the Department proposes to also allow the use of the *E. coli* bacterium to assess pathogen removal. In other words, a permittee may choose to test for either fecal coliform or *E. coli*. The Department is not “changing” *E. coli* limits in the proposed rule, but adding another option for testing. In fact, the Department anticipates that many permittees will choose to use *E. coli* tests to determine compliance with the pathogen removal requirements because newly developed *E. coli* tests are typically simpler and less expensive than existing tests for fecal coliform. These new tests are generically referred to as enzyme substrate or MUG tests by EPA or chromogenic substrate tests in *Standard Methods for the Examination of Water and Wastewater*. EPA approved these tests for drinking water and ambient water (e.g., for use in Impaired Waters listing) and is proposing to approve them for wastewater. The Office of Laboratory Licensure of the Arizona Department of Health Services already has approved use of MUG tests for wastewater on a case-by-case basis, and has indicated that it will approve this testing method on a blanket basis for sewage treatment facilities once the Department’s APP rules becomes effective. (The Office of Laboratory Licensure’s current approvals of this methodology are for tests manufactured by IDEXX Laboratories, Inc., under the name Colilert®, but the Office would review tests that may be developed by other manufacturers using the MUG methodology in accordance with its regulatory procedures.)

The MUG tests use a tray with many wells to determine the concentration of *E. coli* bacteria in a sample. The number of positive wells corresponds to an equivalent concentration in terms of the Most Probable Number (MPN) of *E. coli* per 100 ml of sample. A table provided with the method indicates the correlation between the number of positive trays and the level of *E. coli* in the sample. The commenter asks whether an *E. coli* level of 15 per 100 ml is measurable (this is, incidentally, one of the limits proposed in the rule). In this case, review of the correlation table for a 51-well tray shows that the wastewater would not exceed the *E. coli* limit if 13 wells were positive, but would exceed it if 14 wells were positive. In fact, the MUG method is capable of quantifying *E. coli* at all of the numerical limits proposed in the rule. No change has been made to the rule.

Commenter – Sydney Hay, Arizona Mining Association: (Subsection (B)(5))

“This subsection should be revised to clarify that the performance requirement of the sewage treatment facility for each constituent is the numeric aquifer water quality standards only if the treated effluent will then be discharged to a unit subject to APP requirements. If the treated effluent is reused beneficially or in any other way exempt from APP requirements, the application of numeric aquifer water quality standards is not justifiable.”

Response: The commenter asks to change this subsection to only require the BADCT performance requirement when a discharge is sent to a “unit subject to APP requirements.” This is existing rule language that has not been proposed for change in the rule package. The BADCT performance standard set in this subsection is set based upon the levels of treatment that can be achieved by new wastewater treatment plants on an industry-wide basis (see A.R.S. § 49-243(B)(1)). BADCT for new wastewater treatment facilities subject to individual permits by these rules, i.e., excluding facilities that are exempt or covered by a general permit, sets the performance standards for treatment, regardless of where the effluent goes after it is produced. No change has been made to the rule.

ARTICLE 3. AQUIFER PROTECTION PERMITS – GENERAL PERMITS

PART A. GENERAL PROVISIONS

R18-9-A301. Discharging Under a General Permit

Commenter – Geoff Meek, Yavapai County: (Subsection (B)(2))

“Your LTF information is indeed quick to access - if the LTF# is known - however, the usefulness of the information is greatly diminished without the Assessor’s parcel number. I would recommend you add this information. I may be wrong, but I believe all counties use APN for property identification.”

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Response: R18-9-A301(B)(2) prescribes some of the information submittal requirements for the Notice of Intent to Discharge for Type 2, 3, and 4 General Permits. A blanket requirement for the parcel number was not included in this provision because for some of these general permits, this information is not relevant. However, this comment refers to on-site wastewater treatment facilities, which are covered by a variety of Type 4 General Permits. For this type of facility, the parcel number is relevant and is required as part of the additional Notice of Intent requirements for Type 4 General Permits at R18-9-A309(B), specifically R18-9-A309(B)(2)(a). The Department agrees that adding a field for parcel number to the LTF database would aid in database searches for on-site wastewater treatment facilities and will look into this modification.

Commenter – Angie Garcia, AG Technical Services: (Subsection (B)(2))

This subsection should be revised as follows:

- a. Name, address, and telephone# of the owner or operator of facility who have overall responsibility for compliance with permit being issued.
- b. A signature (Certification of Compliance) on NOI certifying the owner or operator agrees to comply with all requirements of this Article, including specific terms of the general permit.
- c. Name, address, telephone# of designer.
- d. Designer is ☐ Arizona registered professional engineer
☐ Arizona-registered geologist
☐ Arizona-registered sanitarian
☐ A certificate of training from a course recognized by the department as sufficiently covering the information specified in this section R19-8-A310

NOTE: the term investigator is used, I replaced with the word designer as MOST designers do everything...OE a suggestion would be to list who (Designers qualifications and Investigator qualifications)

- e. Name, address, telephone # of general contractor to install the treatment facility
- f. Site information
 - ☐ Conventional Septic System
 - ☐ Alternate Septic System
 - ☐ Expected dates of Operation
 - ☐ System Design Flow
 - ☐ Parcel#
 - ☐ Parcel Size (Acres or Sq Ft)
 - ☐ Township Range Section
 - ☐ Latitude
 - ☐ Longitude
- g. A listing of any other federal or state environmental permits issued for or needed by the facility, including any individual permit, Groundwater Quality Protection Permit, or Notice of Disposal that may have previously authorized the discharge; and
- h. A signature on the NOI certifying that the applicant agrees to comply with all applicable requirements of this Article, including specific terms of the general permit.

(NOTE: REPLACE the word applicant with OWNER as most designers fill out this form)”

Response: Subsection (B)(2) provides a list of Notice of Intent to Discharge submittal requirements that are relevant for all Type 2, 3, and 4 General Permits. The above comment suggests that the Department add information that pertains only to Type 4 General Permits for on-site wastewater treatment facilities. Adding specific Type 4 information to a rule that is meant to deal with general NOI requirements would be inappropriate and confusing. The additional NOI information submittal requirements for Type 4 General Permits for on-site wastewater treatment facilities are found at R18-9-A309(B). Both the general information submittal requirements in R18-9-A301(B)(2) and the requirements specific to on-site wastewater treatment facilities in R18-9-A309(B) are already clearly indicated on the Department’s NOI form for on-site wastewater treatment facilities, which all applicants for this type of facility fill out and submit. Changing the rule would only confuse the NOI applications for Type 2 and Type 3 General Permits. No change has been made to the rule.

Commenter Richard Grimaldi, Pima County Environmental Services Department; John Power, Maricopa County Environmental Services Department: (Subsection (D)(1)(e)(ii).)

The rule should be revised as follows: “Construction shall conform with the plans and documents ~~approved~~ AUTHORIZED by the department in the Construction Authorization.

Rationale: Conforming change. ADEQ does not issue approvals, and in no other provision indicates that plans or designs are approved.”

Response: The Department does not agree. The Department approves plans and issues (authorizes) authorizations. No change has been made to the rule.

R18-9-A304. Notice of Transfer and R18-9-A316. Transfer of Ownership Inspection for On-site Wastewater Treatment Facilities

Commenter – Lowell Fagen:

“These Sections deal with two major issues ---- inspections and transfers of ownership. The inspection part of the rule is undeniably important to buyers as well as real estate agents. It reinforces a contractual provision stated in purchase contracts that have been widely used by the real estate community for many years.

However, there’s been considerable discussion by many stakeholders (including some county agency personnel), concerning the transfer of ownership requirement. This has posed the question, ‘What does this ‘Transfer of Ownership’ exercise really accomplish?’

One rationale expressed for the Notice of Transfer has been, ‘If a mal-function is reported with any on-site system, we need to know who to contact to address the problem.’ First of all, an agency’s occasional need to identify the current owner of an on-site system, for whatever reason, is easily obtained from a county government website . . . which may have more current owner information than a transfer document.

Obviously, the county agency needs to be aware of problems. A mal-functioning system typically shows up on the agency’s radar screen either by the owner coming to the county looking for help, from a complaint by a neighbor (who knows the owner of that system) or from a pre-transfer inspection report. If a transfer inspection reveals any deficiency that requires a repair permit, the agency will be in the loop as they process the repair into their system records.

However, if the inspection results in a ‘clean report’ . . . no deficiencies & no repairs (a majority of inspections), what meaningful benefit is achieved for the agency, or the Department, to have personnel to take the time to process a Notice of Transfer form?

What public interest objective is achieved by the Notice of Transfer rules? Will submitting this transfer document contribute to public health and groundwater protection? How is the cost/benefit justified for the transferee . . . and/or the county agency involved in the process . . . or to ADEQ?

So, now we have the other part of the transfer equation . . . the fee. Based on responses from homeowners and real estate agents, the current \$50 transfer fee is excessive.) Most people accept the idea of transferring ownership of a well because they understand there are entirely different issues (and benefits) involved with wells, water uses, and claimed water rights.)

Another related factor concerns the Department slipping in a late-in-the-process rule change regarding R18-9-A316(E)(1). This states that, starting July 1, 2006 for the pre 1-1-01 systems, the Notice of Transfer, and the fee, is to be filed with the Department. This idea does not reflect previous discussion with, or consensus of, the stakeholders.

The Department infers that, since this is a new program involving a large number of facilities, they are in a better position to implement the program on a consistent basis. They further indicate that, at some point in time, they intend to, ‘....evaluate the delegation of that authority to the appropriate local health or environmental agency.’

Some observers have reflected on an old saying, ‘Follow the money...’; translating this and the rule change as a potential ‘empire building’ opportunity for the Department.

At least at this point, their rationale has not defined how millions of dollars in transfer fees are to be allocated to the Department’s overall objective . . . or what type of benefits may trickle down to consumers.

BOTTOM LINE: In the big picture, ADEQ’s Notice of Transfer rule is of questionable benefit. In my opinion, the Department’s valid objectives can be achieved by certain other real estate related disclosures/procedures and ADEQ rules already in place, e.g.:

- a) A pre-transfer inspection of an on-site system is an accepted procedure by the real estate community. It’s mainly an issue between the transferor and the transferee.
- b) R18-9-A316 states that a buyer/transferee is to receive the inspection report prior to transfer of ownership... which mirrors terms in most purchase contracts.
- c) Other ADEQ rules, current and proposed, address a permittee’s O & M requirements, recordkeeping, and delivery of system documents to a new owner.
- D) A Seller’s Property Disclosure Statement has a section for on-site systems which includes the seller’s knowledge of system inspections, repairs, or problems.
- e) Most rural property transfers also require an ‘Affidavit of Disclosure’ (by statute), which includes a seller’s statement in regard to the on-site system.

If this argument to eliminate the Notice of Transfer, and the fee, is not accepted and remains a part of the rules, my position would then be that all transfers/fees should be submitted to the local county agency . . . not to the Department.

Prior to the 1-1-01 rollout of the current rule package, stakeholders challenged the Department’s estimated economic impact from the rule changes. (This was confirmed by reality within a few months after the rule was implemented.)

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There appears to be a similar reaction to some of the Department's cost/benefit statements in the preamble of the 2005 Notice of Proposed Rulemaking."

Response: The Department agrees with the commenter's acknowledgement that there has been "considerable discussion by many stakeholders" on this issue. In fact, extensive discussions during meetings of the Department-sponsored On-site Wastewater Advisory Committee prior to 2001 helped formulate the approach to inspections of on-site wastewater treatment facilities embodied in the 2001 rule. Since 2001, the dialogue has continued in earnest to consider modifications to the rule that are intended to improve the effectiveness of that original inspection approach. Over this entire period, it is clear that both the Department and stakeholders have desired an inspection approach that: 1) promotes needed repairs and maintenance of systems, including periodic septic tank pumping, to prolong the life of the system (a benefit to the homeowner); and 2) assists in ensuring adequate treatment of the wastewater (a benefit to public health and water quality).

The Department has consistently stated that the inspection approach must provide maximum benefit to homeowners and the environment for the least possible cost, yet be as self-implementing as possible. In formulating the approach written into the 2001 rule, there was consensus (though not universal consensus) that the inspection goals stated above could be accomplished by an inspection at the time of transfer of ownership of the property. During the development of that rule, the Department stated that the inspection approach should: 1) rely on the private sector as much as possible, 2) coordinate with property disclosure and inspection provisions of the real estate contract in use by the Arizona Association of Realtors®, 3) be performed competently in a consistent manner across the state, 4) ensure that needed repair and maintenance are done, 5) provide relevant information about the system and its condition to the prospective buyer of the property, 6) provide relevant information about the system and the new permittee to the Department and its delegated agencies, and 7) function efficiently without extensive oversight and resource needs by the Department and delegated agencies. In the main, the provisions of the 2001 rule met these objectives. However, the 2001 rule applied to only a portion of the on-site wastewater treatment facilities in the state those constructed after the effective date of the rule on January 1, 2001. In this rulemaking, the Department extends the transfer of ownership inspection requirement to all on-site facilities in the state. In addition, in R18-9-A316, the Department is modifying provisions to improve the 2001 inspection approach. In developing these changes to R18-9-A316, the Department benefited from spirited discussions on this topic in numerous stakeholder meetings over the last four years. As in the original rulemaking in 2001, there are still widely differing views on how an inspection program should be structured, so there is no universal consensus among stakeholders over all aspects of the inspection program established in this rule. The Department continues to acknowledge that while many stakeholders may support the overall inspection scheme, they may not agree with every one of its elements.

As mentioned in the Preamble to this rule proposal published on January 7, 2005, the Department would include a delayed implementation date for extending the transfer of ownership inspection to all on-site facilities to allow various institutions to develop training courses and provide time for the potential inspectors to take the course. As published at that time, January 1, 2006 was given as the delayed implementation date. In consideration of the probable effective date of this rulemaking, the Department is establishing in this rulemaking an effective date of July 1, 2006 for full implementation of the provisions of this Section. In other words, beginning on July 1, 2006, all on-site wastewater treatment facilities in Arizona are required to be inspected at the time of transfer of ownership of the property.

In addition to extending the transfer of ownership inspection to all on-site facilities, this rulemaking includes other modifications and improvements to the inspection program. First, based on stakeholder input, the qualification requirements for the inspectors of the on-site wastewater treatment facilities, now found in R18-9-A316(B), are greatly upgraded. The rule now not only requires the inspector to be licensed or otherwise qualified under specific occupational or professional classifications, but also requires successful completion of an inspection course approved by the Department. These provisions will help ensure competency of inspectors and consistency of inspections across the state.

Parts of R18-9-A316(C), (D), and (E) clarify the administrative process. In these subsections the Department proposes changes, based in large part on stakeholder comment, that better track the transaction process that occurs during a property transfer. This process is often facilitated by a real estate agent relying on the Arizona Association of Realtors® real estate contract, which does include a requirement for inspection of on-site systems. Real estate agents now will be able to rely on the uniform inspector qualification requirements and Department-approved inspection forms now mandated in this Section. These requirements should greatly improve the quality and consistency of inspections, which is one of the concerns of this commenter. Under this rulemaking, the seller of the property (transferor) must turn over the inspection form to the buyer of the property (transferee), thus providing critical information about the on-site system to the buyer while also helping to fulfill the disclosure requirements of real estate law. Finally, R18-9-A316(C)(2) requires the septic tank to be pumped at the time of the inspection. This is perhaps the single most important maintenance item that can be done to prolong the life of the system, improve treatment, and ultimately protect water quality. Authorities typically recommend pumping a septic tank every three to five years. Considering that the average time for resale of a house in Arizona is about five years, the Department's approach of requiring pumping at the time of the transfer of ownership inspection is generally consistent with pumping recommendations. This approach also ensures that pumping of the septic tank (as well as any needed repairs to the system) are performed in the most efficient, least costly way possible, with little or no regulatory agency involvement or delays. The commenter questions this approach, but it is the most feasible way to accomplish the two main goals stated in the first paragraph.

Under R18-9-A316(E), at the completion of the property transaction, the transferee provides a Notice of Transfer to the Department on a form approved by the Department. This form provides salient information related to the on-site wastewater treatment facility, including new owner (permittee) data and key information from the transfer inspection. This form also authorizes the permittee to legally continue to discharge from the system under the Department's General Aquifer Protection Permit program. One of the more debated aspects in R18-9-A316 in this rulemaking, which the commenter touches on, is the Department's requirement for all Notice of Transfer forms for on-site systems constructed before January 1, 2001 to be submitted to the Department (instead of offices of the delegated agencies in the 15 counties). The Department included this requirement in this rulemaking to ensure consistency in implementation of the inspection program throughout the state during startup. The Department intends to modify its current databases to accommodate the transfer of ownership information in one place (rather than many locations around the state). The Department also intends to develop on-line forms for simple submittal of the information, similar to the Smart Notice of Intent (Smart NOI) the Department developed for its stormwater permitting program. This should greatly facilitate the submittal process. As the Department has stated at stakeholder meetings, the Department intends to delegate this program, including the electronic submittal of information, to the 15 counties once administrative processes and databases are running smoothly. This will allow on-site system and permittee data for the entire state to be contained in one standardized database, and allow the Department and delegated agencies to develop better outreach and compliance assistance programs. The Department anticipates that the property transfer inspection program can be turned over to the 15 counties in two to three years after the July 1, 2006 effective date for inspections of all on-site systems.

Lastly, the commenter remarks on the fee required with submittal of the transfer of ownership form, which is currently \$50. The fee is established in the Department's water quality fee rule, which is not under consideration in this rulemaking. The Department has indicated, however, that it will reevaluate the fee in a forthcoming revision to the fee rule. No change has been made to the rule.

R18-9-A307. Revocation of Coverage Under a General Permit

Commenter – Todd Williams, Flood Control District of Maricopa County:

"Items C and E.4. are somewhat confusing. Please clarify. In an example where ADEQ's Director requires an individual permit, does this mean the general permit has automatically been revoked? Does this mean somebody discharging under a general permit is then prevented from discharging if they cannot meet the requirements outlined in an individual permit? It sounds like this situation may force you into not being allowed to discharge."

Response: The provision in R18-9-A307(C) is intended to apply when an owner or operator chooses to replace the general permit with an individual permit. In this case, the general permit is automatically revoked upon issuance of the individual permit so there is no overlap in coverage. R18-9-A307(E)(4) only applies if the Department has decided to revoke the general permit authorization. Under certain circumstances, the Department may give the permittee an opportunity to apply for and obtain an individual APP that would allow continued discharge to occur. No change has been made to the rule.

R18-9-A309. General Provisions for On-site Wastewater Treatment Facilities

Commenter – John Power, Maricopa County Environmental Services Department: (Subsection (A)(5)(b))

"Strike entire section b.i and b.ii.

~~B. A SEWER SERVICE LINE EXTENSION IS AVAILABLE AT THE PROPERTY BOUNDARY AND BOTH OF THE FOLLOWING APPLY:~~

~~I. THE SERVICE CONNECTION FEE IS NOT MORE THAN \$6000 FOR A DWELLING OR \$10 TIMES THE DAILY DESIGN FLOW IN GALLONS FOR A SOURCE OTHER THAN A DWELLING, AND~~

~~II. THE COST OF CONSTRUCTING THE BUILDING SEWER FROM THE WASTEWATER SOURCE TO THE SERVICE CONNECTION IS NOT MORE THAN \$3000 FOR A DWELLING OR \$5 TIMES THE DAILY DESIGN FLOW IN GALLONS FOR A SOURCE OTHER THAN A DWELLING.~~

Rationale: Building plumbing will be installed for septic or sewer and is a cost of construction regardless of sewage disposal method. The sewer service connection fee should not be the deciding factor to install an onsite wastewater system or connect to a sewage collection system. Soil conditions will determine if an onsite wastewater system can be installed. Cost should not be a factor in selecting a sewage option."

Response: The Department disagrees that cost should not be factor in choosing when a septic tank can be installed and when hookup to a sewer is required because the cost of connection could be prohibitive to a homeowner depending upon distance and the difficulty of the connection. This allows flexibility for the property owner. The Department also disagrees that soil conditions should be the key factor in determining when to hook to an available sewer. If that were the case, because of favorable soil conditions, the vast majority of lots in Maricopa County could be installed with septic tanks for sewage disposal instead of connection to the sewer. The rule has been revised to clarify that both Aquifer Water Quality Standards and Surface Water Quality Standards apply.

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Commenter – Mike Bunch, Pima County Wastewater Management: (Subsection (A)(5)(b)(ii))

Revise the rules as follows: “A person constructing a new on-site wastewater treatment facility or replacing the treatment works or disposal works of an existing on-site wastewater treatment facility shall connect to a sewage collection system if:

- ii. The cost of constructing the building sewer from the wastewater source to the service connection is not more than \$3000 for a dwelling or \$5 times the daily design flow in gallons for a source other than a dwelling.

Contingency language is needed in the event a connection fee exceeds the cost ceiling and yet the parcel characteristics fail to meet minimum septic standards. This may include constraints such as lot size, percolation problems, floodplain, and setback requirements. Suggested language ‘This fee ceiling will not circumvent site requirements for septic installation as specified in [citation].’”

Response: The Department does not believe such a contingency provision is needed. If the cost of connecting to the sewer exceeds the costs proposed in this provision, the property owner can consider installation of an on-site wastewater treatment facility. However, if because of poor site conditions, the cost of installing such a facility exceeds the cost of connecting to the sewer, it is hard to imagine that the property owner would still install such a system if it would be less expensive to connect to a sewer. In other words, the provision is self-correcting. No change has been made to the rule.

Commenter – Mike Bunch, Pima County Wastewater Management: (Subsection (A)(5)(b)(ii))

“A sewage connection waiver based on a \$3,000 construction cost limit is exceedingly low. This would exclude almost all of the septic connections in the state from a mandatory connection. This cut-off fee should be raised to \$6,000.”

Response: The Department disagrees. First, two costs are involved. For a residential property, the total cost must not exceed a connection fee of \$6000 and a construction cost of \$3000. On this basis, a residential property could have to pay up to \$9000 to connect. Secondly, the Department does not believe that most sewer connections would be excluded. Typical costs for a household sewer connection are \$750 for the tap into the sewer, \$200 for the house connection, \$40 per square yard for asphalt replacement, and \$30 per linear foot for installed sewer service line. Thus, for a typical installation involving 4 square yards of asphalt replacement, up to 63 feet of sewer line could be installed without exceeding the \$3000 criterion. The Department estimates that a typical sewer connection on a residential lot is about 40 feet long. Based on these calculations, a large majority of urban lots will fall within the \$3000 construction cost criterion. Also, the Department’s proposed rule allows adoption of a local ordinance with differing connection requirements, which could encompass a larger percentage of properties. No change has been made to the rule.

Commenter – Todd Williams, Flood Control District of Maricopa County: (Subsection (A)(7)(f))

“This statement talks about a violation of a water quality standard. When we talk about water quality standards, we usually refer to Surface Water Quality Standards. Is this term supposed to be an Aquifer Quality Limit? Please clarify.”

Response: The Department is usually referring to Aquifer Water Quality Standards. In this case, however, the requirement is that the on-site wastewater treatment facility must be operated to ensure there are no violations of either Aquifer Water Quality Standards or Surface Water Quality Standards. Discharge from a poorly operated on-site wastewater treatment facility has the potential to adversely impact both groundwater and surface water; therefore, this requirement applies to both. Subsection (A)(7)(f) has been revised to clarify that both Aquifer Water Quality Standards and Surface Water Quality Standards must be met.

Commenter – Richard Grimaldi, Pima County Environmental Services Department; John Power, Maricopa County Environmental Services Department: (Subsection (A)(9)(b))

“The following work is not considered ~~maintenance~~ ROUTINE WORK and a Notice of Intent to Discharge is required:

Rationale: Conforming change providing clarity and continuity. R18-9-A309(A)(9)(a) provides that an NOI is not needed for routine work.”

Response: The Department agrees and made the change to subsection (A)(9)(b).

Commenter – James Turner: (Subsection (B)(2)(b)(i))

“The term ‘down slopes’ needs further definition. Unless the property is flat, ‘down slopes’ exist on all properties. Do you mean to say ‘down slopes greater than 15%?’”

Commenter – Richard Grimaldi, Pima County Environmental Services Department; John Power, Maricopa County Environmental Services Department:

The rule should be written as follows: “Proposed and existing on-site wastewater treatment facilities; dwellings . . . and down slopes GREATER THAN 15 PER CENT, cut banks,

Rationale: Conforming change necessary to be consistent with the R18-9-A312(C) Setback Table.”

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Response: The Department agrees. To make this provision consistent with the setback table in R18-9-A312(C), the 15 percent criterion needs to apply to both down slopes, and cut banks. Subsection (B)(2)(b) has been amended as follows:

- b. *A plan of the site drawn to scale, dimensioned, and with a north arrow that shows:*
- i. *Proposed and existing on-site wastewater treatment facilities; dwellings and other buildings; drive-ways, swimming pools, tennis courts, wells, ponds, and any other paved, concrete, or water feature; ~~and~~ down slopes and cut banks with a slope greater than 15 percent; retaining walls; and any other constructed feature that affects proper location, design, construction, or operation of the facility;*

Commenter – Richard Grimaldi, Pima County Environmental Services Department; John Power, Maricopa County Environmental Services Department: (Subsection (B)(4))

“Renumber to (B)(6).

Rationale: R18-9-A309(B)(5) and (B)(6) apply to all facilities, while (B)(4) applies only to alternative facilities. Consistent with rule-writing convention, the more universally applied provisions should be listed first.”

Response: The Department agrees and made the change.

Commenter – Richard Grimaldi, Pima County Environmental Services Department; John Power, Maricopa County Environmental Services Department: (Subsection (C)(1)(c))

Add a new subsection as follows: “A FINAL LIST OF EQUIPMENT AND MATERIALS SHOWING CHANGES FROM THE LIST SUBMITTED UNDER SUBSECTION (B)(5).

Rationale: If an initial list of equipment and materials is required with the NOI, a final list should be provided with the ‘as-built’ site plan.”

Response: Due to the simplicity of the equipment and materials list required to obtain a Construction Authorization for a conventional septic tank system under the 4.02 General Permit, the Department does not believe it is necessary to ask for a resubmittal of this information to obtain the Discharge Authorization. Any changes in configuration that would result in changes in pipe length, volume of aggregate used, or other item on the equipment and materials list would be readily evident on the final site plan submitted under R18-9A309(C)(1)(a). Asking for resubmittal of the equipment and materials list would create an unnecessary burden. This is in contrast to alternative systems constructed under the 4.03 through 4.22 General Permits, where a final equipment and materials list is required because it is germane to determining the adequacy of the constructed on-site wastewater treatment facility. For conventional systems, though, no change to the rule is needed.

Commenters – Richard Grimaldi, Pima County Environmental Services Department; John Power, Maricopa County Environmental Services Department: (Subsection (C)(2)(b))

Add a new subsection as follows: “THE APPLICANT CERTIFIES ON THE REQUEST FOR DISCHARGE AUTHORIZATION FORM THAT THE SEPTIC TANK PASSED THE WATERTIGHTNESS TEST REQUIRED BY R18-9-A314(E)(4);

[Renumber to Conform]

Rationale: The water-tightness test certification should apply to all tanks, not just tanks permitted under the 4.02 General Permit.”

Response: The Department agrees with the commenters. The requirement for certifying the watertightness of a septic tank logically applies whether the septic tank is installed wholly under the 4.02 General Permit or combined with a technology allowed under the 4.03 through 4.22 General Permits. The Department inadvertently omitted the watertightness test requirement in the latter case. To correct this, subsection (C)(2)(h) has been added to the rule:

(h) A certification that any septic tank installed as a component of the on-site wastewater treatment facility passed the watertightness test required by R18-9-A314(E)(4).

Commenter – Richard Grimaldi, Pima County Environmental Services Department; John Power, Maricopa County Environmental Services Department: (Subsection (C)(2)(b))

The rule should be revised as follows: “A final list of equipment and materials showing changes from the list submitted under subsection ~~(B)(4)(b)~~ (B)(5);

Rationale: The initial list of materials is required by subsection (B)(5).”

Response: The reference has been changed to (B)(4), based on the revision made to R18-9-A309(B)(4) above.

Commenter – Lou Brown, SouthWest Alternatives: (Subsection (C)(2)(d))

“The Department has made it mandatory for certain types of alternative systems to have a certificate of service contract. I have been told by the staff of the Department that the 2001 Rule was to ‘level the playing field’ with all systems. However, putting this type of service contract as a requirement in the rule for some and not all system is discriminatory. My opinion is that all systems, both conventional and alternative system, need and should be required

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to have routine maintenances; but to require it for some and not for other types is not fair with the final result being an additional financial impact to the property owner, a tax paying citizen of this state.”

Response: The Department included the provision to require proof of a service contract for most alternative systems in response to stakeholder comment. The rationale expressed by stakeholders, with which the Department agrees, is that these systems are considerably more complex than a conventional system and require much more frequent attention to ensure their proper operation. Less than 5 percent of the on-site wastewater facilities constructed in Arizona are alternative systems. The other 95 percent are conventional septic tank/disposal field systems that do not require this level of oversight and service. Therefore, the Department will not impose the same service requirement on homeowners with conventional systems. No change has been made to the rule.

Commenter – Kitt Farrell-Poe, Cooperative Extension: (Subsection (C)(2)(d))

“The proposed rule requires certification that a service contract for operation and maintenance of an alternative system be in place for at least one year after beginning operating the system. I would like to see either: (1) the certification that a service contract for ensuring that the facility is operated and maintained to meet the performance and other requirements of the applicable general permits exists for the life of the system; or (2) that an “environmental inspection” (or inspection equivalent to the Transfer of Ownership) be conducted every 1 to 2 years. This would be similar in philosophy as a smog inspection for cars – inspecting potential pollution devices to make sure that they are operating in which the way they were designed.”

Commenter – Richard Grimaldi, Pima County Environmental Services Department: (Subsection (C)(2)(d))

The rule should be revised as follows: “A certification that a service contract for ensuring that the facility is operated and maintained to meet the performance and other requirements of the applicable general permits exists for ~~at least one year~~ THE OPERATIONAL LIFE OF THE FACILITY following the beginning of the operation of the ~~on-site wastewater treatment~~ facility, including the name of the service provider, if the on-site wastewater treatment facility is permitted under:

Rationale: More advanced treatment technologies are required when site limitations prevent the use of conventional facilities. These technologies are required to demonstrate that they can meet minimum performance requirements in order to be allowed for use. The demonstration of performance occurs when the facility is being properly maintained. Lack of maintenance on the facility reduces the efficacy of the facility, and the demonstrated performance may no longer be achieved. However, because the site limitations on the property do not go away, maintaining performance is necessary. As such, it is important that the rule ensures that the facility is properly serviced for the life of the facility.”

Response: Both commenters suggest that an applicant demonstrate that, prior to Department issuance of the Discharge Authorization, a service contract is executed for the operational life of the facility. This approach is impractical and might foster hasty, potentially ill-advised, and costly decisions by homeowners under pressure to complete construction of a new on-site wastewater treatment facility for their residence. The requirement for a one-year service contract will ensure that the homeowner’s system is working properly during startup and provides a period of familiarization with the system so that the homeowner can take over O&M responsibility after one year, or more likely, renew the service contract or change service companies. The idea of requiring a more frequent inspection than the transfer of ownership inspection at the time of property transfer has been extensively discussed by stakeholders, with discussions even predating the effective date of the existing rule on January 1, 2001. Ultimately, most stakeholders (although not all) agreed that a uniform transfer of ownership inspection be instituted and perfected over a period of time before consideration is given to more frequent inspections. This is the prudent approach. No change has been made to the rule.

Commenter – Lou Brown, SouthWest Alternatives: (Subsection (E))

“The Department has established some protocol as to what this process is. However, being involved with a product that has attempted for more than 3 years to have design criteria specific to our product establish have encounter obstacle after obstacle. The Department has a vague outline of what technical information is to be submitted. However, when this information has been provided to the Department, attempts to gain the written response have been ignored. This protocol is flawed. It would have been advantageous if the Department had consulted with the various product industry manufacturers in drafting, or at the very least, consulting with them on how it would impact the product functioning or operation.

In the preamble regarding this section also, notation is made listed septic tanks or effluent filters as part of their proprietary product listing. Disposal field component manufacturers are required to warranty their products and a system is to be designed for a 20-year life. Common sense would dictate that the Department would also approve the septic tanks and effluent filters in a similar fashion. However, with the rule section R18-9-A314 spelling out how a septic tank is to be made, they will self-regulate themselves. As a distributor of one of the proprietary products approved by the Department, not having the approved listing of tanks and filters makes us question whether or not we should validate any warranties of our systems if the septic tanks and filters are a self-policed product.

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The Preamble also comments on the Stakeholders suggestion of treatment performance of treatment technologies in series. If the Department would review a few of these technologies in series, they could produce a reference design for it. This technology could then be utilized in a site-specific design.”

Response: The Department disagrees that it has provided only a vague outline of required information for a product approval. The Department has provided considerable information in guidance as to its expectations. In some cases, the Department has not been able to promptly make a determination on a product listing under R18-9-A309(E) because a manufacturer has supplied incomplete information about product performance. Regarding the second comment, as stated in the Preamble and explained repeatedly during stakeholder meetings, the Department does not require product approvals for septic tank systems because detailed design, configuration, materials, and construction standards are already specified in rule at R18-9-A314. A septic tank sold in Arizona must meet these standards, which assures that it will meet the treatment performance requirements established in rule for septic tanks at R18-9-E302. Specifications for effluent filters are also provided in rule at R18-9-A314(E)(3). In summary, the Department stands by its approach to product approvals. No change has been made to the rule.

Commenter – John Power, Maricopa County Environmental Services Department: (Subsection (E)(2))

The rule should be revised as follows: “The list of proprietary and other reviewed products may include manufactured systems, subsystems, or components within the treatment works and disposal works if the products significantly contribute to the treatment performance of the system or provide the means to overcome site limitations. The Department ~~shall~~ will not list septic tanks, effluent filters or components that do not significantly affect treatment performance or provide the means to overcome site limitations.

(All caps to be removed from the rule language.)

Rationale: Septic tanks and effluent filters do influence the overall performance of an onsite wastewater system. The Department should not remove all plan review of tanks and filters.”

Response: The Department agrees that septic tanks and effluent filters do influence treatment performance, but please see the response in the previous item explaining why the Department does not require product approvals for these components. No change has been made to the rule.

R18-9-A310. Site Investigation for Type 4 On-site Wastewater Treatment Facilities

Commenter – Joelle Wirth:

“This section refers to a study on seepage pits that concluded in June 2003 that indicates seepage pits were found to be adequate for the protection of public health and water quality. Per Kit Faro-Poe at a Laughlin Conference, she gave the results of the study that I believe to be in question and suggested that pretreatment should be utilized in front of a seepage pit. In addition, nationwide, AZ continues to be one of the only states in the nation to believe that seepage pits are a reliable and safe method of wastewater disposal. Many of the other states have removed seepage pits from use as a viable wastewater option.”

Response: The study the commenter refers to was funded by the Department and conducted by the University of Arizona for the express purpose of addressing stakeholder questions during the first rule drafting process prior to 2001. The University of Arizona study, completed in June 2003, concluded: “[d]ata collected in this study indicate that the current on-site wastewater treatment regulations for seepage pit MVS [minimum vertical separation] are adequate for the protection of public health and water quality.”

The current rule at R18-9-A312(E)(1) provides for a minimum vertical separation distance from the bottom of the seepage pit to the top of the water table of 25 or 60 feet depending on soil type. In this rulemaking, the Department revised the MVS to a single criterion of 60 feet to provide an even greater safety margin for those seepage pits that currently could be constructed 25 feet from the water table. This change also eliminates any confusion as to which setback, 25 feet or 60 feet, applies. Based on the University of Arizona study and the extra protection provided for some seepage pits by the 60 foot MVS, the seepage pit design and construction requirements are protective of water quality. No change has been made to the rule.

Commenter – Kitt Farrell-Poe, Cooperative Extension: (Subsection (C) and (D))

“Both subsection C and subsection D, require the use of ASTM standards or another testing method approved by the department. For describing soil characteristics of texture, structure, and consistence, the “Field Book for Describing and Sampling Soils” published by the National Soil Survey Center, Natural Resources Conservation Service, U.S. Department of Agriculture, Lincoln, Nebraska, September, 2002, is a better choice of method. This publication is reviewed and updated more frequently than the ASTM standards. For instance, it took from 1996 to 2003 for the ASTM Standard 5921 “Standard Practice for Subsurface Site Characterization of Test Pits for On-Site Septic Systems” to be updated, and only four years for the Field Book to be update. Also, the ASTM standards use the Field Book as their reference for some of the standards, but sometimes get it wrong. For instance, in ASTM Standard 5921, Figure 3 is mis-labeled, and Figure 2 is not correct. Why not use the original source? I recommend either eliminating the ASTM Standards as methods of determining subsurface and surface characterization of a site and substituting the Field Book as the method of choice or including the Field Book as a method of choice with the ASTM Standards.”

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Response: The Department has no objection to allowing a soil characterization method based on the “Field Book for Describing and Sampling Soils,” published by the USDA. However, this comment is the first mention of potential use of this method. In order to thoroughly consider the many details of the method, it should be submitted to the On-Site Wastewater Advisory Committee and other stakeholders for review. The Department encourages the commenter to participate in this process. Presuming an outcome of general consensus for the method, the Department could approve its use under R18-9-A310(D)(1)(d), which allows the Department to approve alternative methods of subsurface characterization. No change has been made to the rule.

Commenter – James Turner: (Subsection (C)(2)(d))

“The 100-year flood hazard zone is typically difficult to locate with any accuracy and expensive to the property owner. Dependent on the particular flood hazard wash, outer edges are rarely a problem having shallow slow moving waters that pass by in a relatively short time. It would be less onerous to the property owner and still safeguard the State if a distance were used. For instance 200’ from the floodway of the wash or a more specifically worded rule could be set in a table as a setback dependent upon the flow rate of the wash or if the property is on the outside or inside of a bend. This type of information is readily available from the local flood control district and would be less expensive to the property owner.”

Response: This subsection does not require a site investigator to perform an independent analysis to determine the location of the 100-year flood hazard zone. The site investigator must simply point out on the application form if “a 100-year flood hazard zone, *as indicated on the applicable flood insurance rate map*, is located within the property...” [italics added for emphasis]. In other words, the investigator’s duty is only to consult existing maps to determine the relevance of a 100-year flood hazard zone to the applicant’s property, not to perform complex hydrologic field work. No change has been made to the rule.

Commenter – Dan Smith, Arizona Water Design; Joelle Wirth: (Subsection (D)(1)(a)(i) and (ii))

“The requirement to use the auger method for sites with less than 10 feet should be removed. It could be included as a means to evaluate but should not be endorsed as the preferred method. The ASTM methodology states that a backhoe should be used in all cases unless there is a physical or economic hardship to prevent its use. The backhoe allows for an undisturbed soil to be evaluated where an auger mixes it up when drilled into a depth of 10 feet.”

Response: The Department agrees that the language at the beginning of R18-9-A310(D)(1)(a)(ii) appears to direct use of the ASTM D1452-80 (2000) methodology if the depth to groundwater is less than 10 feet below the bottom of the planned disposal works. The Department did not intend to imply this. On the contrary, the Department expects the site investigator to select a method or methods that are appropriate to site and soil conditions. In fact, ASTM D1452-80(2000) is an acceptable method if the depth to groundwater is less than 10 feet and soil structure is not critical to determining the SAR from the soil characterization table in R18-9-A312(D)(2)(b). However, the rule language should not imply that this method must be used. For this reason, the Department has made the following change to this rule:

(ii) ~~If the depth to groundwater is less than 10 feet below the bottom of the planned disposal works,~~ “Standard Practice ...

Commenter – James Turner: (Subsection (D)(2)(d)(iii))

“The rule formerly read, ‘soil with more than 35% rock fragments greater than 3’. Pima County has supported changing this rule to include all particles greater than 2mm in size. This is approximately 5/64 of an inch. This proposed rule change is because of one instance when the County had a disagreement with one engineer. My objection is that almost all soil tests would include more than 50% fragments greater than 2mm. That would put the large majority of test holes in a limiting condition. No one at Pima County or the State will say what the ‘cure’ is when the limiting condition occurs. If this proposed rule occurs the State should state what the options are for the property owner. Typically when a limiting condition occurs, a Form ‘F’ waiver is filled out with the engineer stating why the limiting condition should not apply. In this case the majority of tests would require a waiver! It is not logical for the majority of cases to require a waiver. As an experienced engineer (44 years in the field with approximately 30 years doing septic systems) I’m not sure what a good engineering reason would be for waiving such a restrictive rule other than my experience that this type of soil would support a standard septic system. That is using opinion for an engineering reason, which is illogical.”

Response: The Department agrees with the commenter’s assessment that many soils suitable for a conventional disposal field would be considered a limiting condition if the definition of rock fragment, as recommended by the On-site Wastewater Advisory Committee, is considered to a particle greater than 2 millimeters across. Because the Department does not want delegated agencies deluged with applications indicating the presence of a limiting condition when, in fact, standard design procedures are appropriate for a conventional disposal field, the Department intends to provide guidance to clarify the particular soil conditions for which a “limiting condition” designation is truly warranted. No change has been made to the rule.

Commenter – James Turner: (Subsection (D)(3)(b)(iii))

“The above argument would also apply to this rule that 35% surface rock greater than 2mm be a limiting condition. The old rule of ‘greater than 3 inches’ was much easier to apply and had few if any problems.”

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Response: As described in the previous response, the Department intends to provide guidance on this issue when the rule becomes effective. No change has been made to the rule.

Commenter – Richard Grimaldi, Pima County Environmental; John Power, Maricopa County Environmental Services Department: (Subsection (D)(3)(b)(vi))

The rule should be revised as follows: “A percolation test yields results outside the limits specified in ~~subsections SUBSECTION (D)(2)(a) and (b).~~

Rationale: The limits are specified in R18-9-A310(D)(2)(a)(i) and (ii).”

Response: The Department agrees and deleted the subsection (D)(2)(b).

Commenter – James Turner: (Subsection (E)(1))

“I have no objection to the number of test holes in the primary/reserve areas, however a distinction should be made as to what ‘area’ actually means. For many months after the 2001 rules were in effect Pima County would accept a test hole within 20’ of the final field location. Then for an unexplained reason they required the test hole to be within the boundaries of the final field location. For small properties that isn’t a problem, however larger properties where the house location is not firmly fixed the test holes could fall outside of the field. This usually happens when the house location is moved between when the tests were made and the builder actually starts construction work. The engineer should certify that the test holes are representative of soil in the field location. Requiring a new test hole only 5’ from a previous test hole is just causing more unneeded expense to the property owner.”

Response: The Department chooses not to define “area” for the purpose of determining test hole locations. The rule requires that test hole locations be representative of soil conditions where the disposal field is constructed. Because of variations in lot size and soil and site conditions, delegated agencies must have flexibility in this determination. No change has been made to the rule.

Commenter – Angie Garcia, AG Technical Services: (Subsection (E)(1)(f))

“The rule states: ‘Use buckets with holes in the sides to support the side walls of the percolation test hole, if necessary. The investigator shall fill any voids between the walls of the hole and the bucket with pea gravel to reduce the impact of the enlarged hole.’

This phrase does not say anything about how large the holes should be. Or specifies what manufacture bucket to use.”

Response: The Department does not believe it is necessary to specify hole size. Whatever bucket is used, it should minimize the amount of soil entering the bucket during the percolation test. Hole size could conceivably vary depending on the fineness or coarseness of the soil being tested. No change has been to the rule.

Commenter – Joelle Wirth: (Subsection (E)(3)(a))

“I believe soil structure should have been the term used as opposed to soil type.”

Response: The requirement for submittal of a log of soil formations applies to soil characterizations using either the percolation test or ASTM methods. The term “soil structure” is used in the ASTM method, but not in the percolation test method. The term “soil type” is thus more inclusive. No change has been made to the rule.

Commenters – Dan Smith, Arizona Water Design; Joelle Wirth: (Subsection (E)(3)(b))

“Included with relevant data should be soil indicators, as they are recognized nationwide by NRSC and site evaluators.”

Response: The Department disagrees. Subsection R18-9-A310(E)(3)(b) specifies the types of evidence that are acceptable to the Department to establish a reliable depth to groundwater. Soil indicators, such as mottling, are indirect evidence and were purposely excluded from the list of acceptable types of evidence. Soil indicators are often misleading or erroneous in defining the actual depth to groundwater in an aquifer. No change has been made to the rule.

Commenter – Joelle Wirth: (Subsection (F))

“Perc testing- This language needs to be cleaned up so that the tester realizes that they are performing two or more tests in the same horizon and need to test the relevant horizons to be able to provide adequate and data. I realize that the rule is a minimum requirement and it would be helpful to say when more test locations are needed.”

Response: It would be counterproductive to try to anticipate and specify the number of tests that are needed considering the myriad of site and soil conditions that exist. The rule states that percolation testing should be performed at intervals in the soil profile “sufficient” to establish soil properties. Although a soil investigator and delegated agency may sometimes interpret differently the number of tests needed to sufficiently characterize the hydraulic properties of the soil, delegated agencies must have a certain amount of flexibility to make reasonable decisions when questions arise. To eliminate one potential source of confusion, though, the first sentence of R18-9-A310(F)(1)(b) is changed as follows:

b. Perform percolation testing at each ~~site~~ location at...

Commenter – Kitt Farrell-Poe, Cooperative Extension: (Subsection (F)(1)(c))

“The code requires a 12-inch square or 15-inch round excavated percolation test hole. From the standpoint of loading and being comparable to the soil characterization method, the percolation test hole should only be between 6 and 8 inches in diameter. A brief search on the web shows other jurisdictions using different diameter percolation holes: 1 county in WY uses 4’-12’ diameter; 1 county in WA uses a 6’ diameter perc hole; 3 counties in MN, CA, and IO use 6’-8’ diameters; 1 county in PA uses a 6’-10’ diameter perc hole; 1 county in CA uses a 6’-12’ diameter hole; 1 county in PA uses a 12’-15’ diameter perc hole; and one county in MD uses a 12’ x 12’ square hole. As you can see, the majority of the counties surveyed use diameters less than 12’. Also, the state needs to make sure that the outcome of the evaluation of the soil by the soil characterization method compares to the outcome of the soil evaluation using the perc test method, i.e., comparing apples to apples, not apples to oranges.”

Response: The Department agrees that methodologies for performing percolation tests are not standardized on a national level, and believes efforts to develop more standardization would be fruitful. The methodology in the current rule, however, was generally agreed to by a large number of stakeholders prior to 2001. Based on this general consensus and the lack of any substantive alternative proposals to date, the Department is not changing the existing rule. However, the Department will encourage On-site Wastewater Advisory Committee members to consider for a future rule change alternative methods of percolation testing that are simpler or provide more accuracy.

Commenter – Joelle Wirth: (Subsection (G))

“Seepage pits, I would like to know how accuracy can be achieved through evaluation of an 18’ hole 30 f’ deep? How does proper scarification occur? From this practice the testhole method is much more comprehensive.”

Response: This testing procedure was developed by a group of stakeholders prior to 2001. The Department is not aware of any inappropriate designs that have resulted from using this methodology. Additionally, no substantive alternative methodology has been proposed. No change has been made to the rule.

Commenter – Maricopa County Environmental Services Department – John Power: (Subsection (G)(3)(b))

The rule should be revised as follows: “Conducting the test. The investigator shall:

b. Observe the decline of the water level in the hole and determine and record the vertical distance to the water level from a fixed reference point every 10 minutes UNTIL THE WATER COMPLETELY DRAINS AWAY; The investigator shall ensure that the method for measuring water level depth is accurate and does not significantly affect the rate of fall of the water level in the test hole;

Rationale: This addition will ensure the soil conditions for a seepage pit are infiltrative through the entire boring.”

Response: Because of the significant depth and volume of a seepage pit (in comparison with a percolation test hole), the water does not have to drain completely away to determine hydraulic capacity. Also, there is no requirement in rule for a seepage pit to be infiltrative through the entire boring. No change has been made to the rule.

Commenter – Kitt Farrell-Poe, Cooperative Extension: (Subsection (H))

“The proposed rule provides that a site inspector needs to have knowledge and competence in the subject area and is licensed in good standing OR otherwise qualified in one of 5 categories. I feel that persons performing a site investigation for the installation of an onsite wastewater treatment system should have the same qualifications required of them as for Transfer of Ownership Inspections (R18-9-A316(B), p. 249). More specifically a site investigator should need to possess working knowledge, hold a certain kind of license, and be trained in performing the inspection, as does the person performing a Transfer of Ownership inspection.”

Response: Performing a site investigation for a disposal works and conducting an inspection of an existing on-site wastewater treatment facility consisting of both a treatments works and a disposal works are two substantially different tasks and do not necessarily require the same regulatory approach to qualifications. The qualifications specified in R18-9-A310(H) are appropriate for a person performing a site investigation. No change has been made to the rule.

Commenter – Joelle Wirth: (Subsection (H))

“This Section has more rigorous requirements to adhere to, which is a good idea, however the continuing education component is hindered by the agency’s requirement of a certificate instead of a certification. A certificate could imply a one-time training. For professionals as well as educators it is difficult to offer worthwhile programs if there is not an incentive to attend the classes. It is also worth noting that the Agency listed Design as one of the top three priorities in wastewater, (design, installation and Operation and maintenance), yet there are currently no requirements for a designer. A designer needs the same qualifications as a soils evaluator as they need to be able to interpret and amply the information correctly. Again an on-going Certification program would help educate regulators, designers and industry people into making better decisions.”

Response: The Department appreciates the comment supporting the inclusion of qualifications in this rulemaking for a person performing a site investigation. The commenter is correct that the requirement for a certificate does imply a one-time training. The Department believes that a certificate issued by the course instructor to a person who

satisfactorily completes the course is appropriate. It makes sense to implement this approach to determine its effectiveness before considering further changes. The Department supports continued educational training and nothing in this rule prevents training. No change has been made to the rule.

R18-9-A311. Facility Selection for Type 4 On-site Wastewater Treatment Facilities

Commenter – Joelle Wirth: (Subsection (C))

“This section was changed without stakeholder input. I believe that by allowing any designer to design for any subsurface limiting site condition that the agency is placing a great economic burden upon the delegated authorities. If the state feels that conventional systems will work in most cases then they should not have bothered with a performance matrix. Many designers will opt to attempt to prove conditions for a conventional system that have already been described and designed for in our rule process. Why play games with the public? By throwing into the 312 G process the county’s are faced with extra time, the potential for more cost expenditures and opportunity for disagreement that could increase appeals. It also would be bad for customer service as it will boil down to opinions of what is acceptable while attempting to be consistent. Without definition, whose justification prevails?”

Commenter – Dan Smith, Arizona Water Design: (Subsection (C))

“This section was revised without stakeholder input. I am adamantly opposed to its inclusion in the rule. By allowing a designer to submit a proposal to get around the rule using a substandard technology to discharge closer than four feet to a subsurface limiting site condition is bad engineering and environmentally insensitive on the part of ADEQ. The vertical separation for standard systems used by ADEQ & the Counties for the past thirty years has been 4-5 ft. It has been in existence for this many years for a reason, to protect the environment and public health. It is not just a groundwater protection issue. Wise and well informed regulators and private sector professionals who wrote past rules were well aware of this. ADEQ truly has two uniformed staff members who do not see the rational for the minimum vertical separation or the bigger picture, making dramatic changes to a rule that has been around for so long. To allow an unjustified A312.G. to bypass the rules is a travesty. The agency is opening a situation that will lead to inconsistencies of interpretations by each delegated authority, in addition to economic burdens. Some caused by lack of knowledge or understanding of the rule, and others due to the political climate of the specific County. If ADEQ feels conventional systems will work in most cases then they should not have gone to such detail with a performance matrix. Many designers will opt to attempt to prove conditions that are better described and designed for in our rule process. The A312.G process will burden the County with additional time and the potential for more cost expenditures through the hearing process. It is not good customer service when it comes down to a regulators versus a designers opinions of what is acceptable. ADEQ needs to assure consistency. In addition, has ADEQ considered the economic impact on designers, alternate system manufacturers and alternate system installers who will surely see a dramatic reduction in the number of alternate systems being designed and installed.”

Response: Contrary to the commenter’s assertion, the Department first proposed this language in its first informal draft to the public dated April 27, 2004. These provisions are intended to recognize that, although certain limiting conditions may exist at a site, a homeowner still might be able to install a conventional septic tank and disposal field if 1) an engineering design can be formulated to overcome the site limitations and 2) the adequacy of the design is demonstrated through the process described in these provisions.

In regard to claims in the second comment, the commenter may have misread the rule. Subsection (C)(2)(b) indicates that the use of a conventional system in a situation where a high water table intrudes into the minimum vertical separation distance is not allowed.

Finally, the Department disagrees with the implication that its rule should promote the installation of an alternative system because of the beneficial economic impact that accrues to manufacturers, designers, and installers of such systems. The Department has considered the economic impact on designers and others but the benefit to protect health and water quality exceeds any adverse economic impact. The investigation process and design requirements are established to satisfactorily address site and soil conditions and to ensure that designs are protective of public health and water quality. The rule would not be in the public interest if it subjected homeowners to accepting costly, over-designed, or unnecessary systems. No change has been made to the rule.

Commenter – Lou Brown, SouthWest Alternatives: (Subsection (D))

“If a property owner wishes to utilize an onsite system with enhanced performance treatment, he must ask the Department to do so. There is no guarantee that the Department will grant the request. Yet this individual is protecting the environment and our precious underground water resource with wanting to utilize a system that will treat the effluent better than conventional disposal methods. This creates another obstacle for this individual to overcome and infringes on this individuals rights to choice.”

Response: In fact, this is a consumer protection provision. It is intended to prevent vendors from persuading homeowners to purchase a costly, unnecessary alternative system if a conventional septic tank/disposal field system can provide the required treatment and disposal capabilities. This provision does not at all prevent a homeowner from electing to install an alternative system instead of a conventional system. Many Notice of Intent to Discharge forms are actually submitted by the homeowner’s agent (i.e., the system designer) rather than the homeowner him or herself. This provision assures the Department that the homeowner actually is aware of and desires to install the alternative system. No change has been made to the rule.

R18-9-A312. Facility Design for Type 4 On-site Wastewater Treatment Facilities

Commenter – Jack Bale, Wilson Bale Associates: (Enforcement Policy and Strategy)

“Arizona’s program to regulate on-site wastewater treatment systems was originally defined in the Department’s Bulletin 12 guidance document. Bulletin 12 was in use up to the time that the APP rule revision of 2001 was adopted. Bulletin 12 requirements depended almost exclusively on design reviews and construction approvals issued by county agencies and the Department. There was no formal enforcement of Bulletin 12 requirements. The current set of APP rules and the proposed amendments follow the same pattern with the exception that the requirements that must be met to receive a design approval and a construction approval (approval to discharge under a general permit) are more complex and onerous.

The result is a program where all staff effort and the majority of the effort of the regulated community is focused on system design and construction as was the case in the Bulletin 12 days. Now it is more difficult and costs are higher. Because none of the agencies that currently operate the program have mechanisms to fund other program activities, the rules covering operation and maintenance, tank construction, and the certification of new technology will be ignored or not actively implemented.

Operation and maintenance and assurance that equipment used in these systems meet standards is as critical to the life of these systems as proper design and construction. Therefore some attention should be given to how these other non-Bulletin 12 program components should be implemented. The Department should evaluate the implementation work process associated with each part of the APP General Permit program before the rules are proposed for adoption. That clearly has not been done.

Arizona would be better served if the proposed APP General Permit program rules were to be withdrawn from the current rule making process. Except for a lack of resources committed to an efficient enforcement strategy, the major and most costly flaws in the rules can be easily corrected. Reasonable general permit rules could be back to the Secretary of State with in six months.”

Response: The Department disagrees with the notion that the current APP rules for on-site wastewater treatment facilities provide little more guidance than the superseded Bulletin 12. Foremost, the Department rules are firm and enforceable compared to the old guidance document. They are also comprehensive. The 2001 rule and revisions in this rulemaking cover the aspects of the on-site program mentioned in this comment and much more. The mechanisms for operation and maintenance, tank construction, and product approvals established in this rule are highly appropriate. These mechanisms promote compliance without excessive staffing increases by the Department and delegated agencies. The mechanisms were designed to be as “self-operating” as possible, which means that costs are not passed on to homeowners installing and operating on-site wastewater treatment facilities.

The Department also disagrees with the suggestion to withdraw the proposed general permit provisions from this rulemaking because “Arizona would be better served.” In fact, the changes proposed by the Department in this rulemaking are intended to serve the public interest. The changes improve technical and administrative aspects of the program, enhance environmental protection and, for a great many homeowners, reduce system installation cost. Years of stakeholder effort have gone into the development of both these revisions and the underlying 2001 rule. The Department does not expect every person to agree with every provision in the rule. By and large, though, there is a great deal of consensus on both the Department’s administrative and technical approach to the rule, as well as the specific rule provisions. Where differences of opinion still remained among stakeholders, the Department adopted language that 1) conforms with the APP statutes, 2) makes administrative and technical sense, and 3) serves the public interest. In fact, the public interest would be ill-served if the Department withdrew the proposed revisions.

Commenter – Lou Brown, SouthWest Alternatives: (Subsection (B)(4)(b))

“Regarding ‘hydraulic analysis’, the Department should specify what type of analysis is required; or provide and example of the analysis (i.e. Darcy’s K, etc.) and establish some guidelines.

In section (D) (2) (b), to determine the SAR by soils evaluation method, the chart that is use provides for only 5 SAR values that translates to a 3, 6, 8, 25, and 61 MPI rate. A chart should be derived to compare to the SAR values of the chart in (D) (2) (a).

The equations for adjusting the SAR value for alternative disposal methods is total bogus. Devising an equation that is mathematically correct but lacks the testing and research to support the equation goes totally against the concept of good science and technically sound evaluation. Both OWAC and the Stakeholders groups have proposed other alternative equations and methods that have the supporting documentation for a substitute equations that the Department has failed to give any written comments as to why they choose not to utilize documented research.”

Response: Regarding the hydraulic analysis, the Department is not specifying a particular methodology for it because differing site and soil conditions might justify differing approaches to the analysis.

Regarding the comment about the SAR table, the rule provides two different methods to perform a soils evaluation and derive a soil absorption rate (SAR): use of a percolation test, which uses the table in subsection (D)(2)(a) and use of the ASTM method, which uses the table in subsection (D)(2)(b). As noted by the commenter, the latter SAR table categorizes all acceptable soils into only five SAR values. In contrast, the percolation test method allows the determination of the SAR in a continuous range rather than in steps. These are inherent characteristics of each methodology,

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and each methodology has its advantages and disadvantages. The investigator must consider each method's advantages and disadvantages when deciding how to perform the soil evaluation.

Finally, the Department disagrees that OWAC and stakeholders groups have proposed viable equations for adjusting SAR based on improved quality of the treated wastewater as a replacement to the Department's equation in R18-9-A312(D)(3). Equations that have been proposed to the Department fail to encompass the full range of soil permeabilities (SAR) or effluent quality (characterized by levels of TSS and BOD in the treated wastewater) that the Department's equation covers. While the proposed equations may have validity in a certain range of soil permeability and wastewater quality, they do not model the continuum of these properties. As stated in the Preamble to this proposed rule, the Department recognizes that more research is needed on this topic, but lacking a proposed alternate equation that can model the full range of soil and wastewater quality properties, its equation reasonably models these properties and the Department stands by its use.

No change has been made to the rule.

Commenter – Angie Garcia, AG Technical Services: (Subsection (B)(4)(h))

The rule states: "Reference Design. If using a reference design on file with the Department, indicate the reference design within the information submitted with the Notice of Intent to Discharge."

Where are these reference designs?

I would rewrite this to make it more clear like this R18-9-A301(B)(2). Page 84"

Response: Currently, the Department has no reference designs on file. However, the Department encourages manufacturers to submit reference designs to simplify the submittal process for applicants using the manufacturer's technology. Use of a reference design is optional and only applies to Type 4 General Permits for on-site wastewater treatment facilities. This is the reason for the wording of the provision quoted by the commenter and why this provision is placed in R18-9-A312 (which relates to on-site wastewater treatment facilities) rather than R18-9-A301 (which applies to all general permits). No change has been made to the rule.

Commenters – Richard Grimaldi, Pima County Environmental Services Department; John Power, Maricopa County Environmental Services Department: (Subsection (C) 8 in the table)

The rule should be revised as follows: "Setback Table – 8. Wash OR DRAINAGE EASEMENT with drainage area more than 20 acres ~~or a drainage easement~~."

Rationale: Proposal is consistent with existing rule. There are many drainage easements that have small watersheds that do not need a 50 foot setback."

Commenter – James Turner:

"Setbacks. #8 states 'Wash with drainage area of more than 20 acres of a drainage easement.' This would require a 50' setback from any drainage easement. Many drainage easements are for small watersheds. I believe a better wording would be 'wash or drainage easement with a drainage area of more than 20 acres.'"

Response: The Department agrees with the commenters and made the change.

Commenter – Todd Williams, Flood Control District of Maricopa County: (Subsection (C) 10 in the table)

"Does this setback distance for a domestic service water line prevent sewer lines from passing through storm drains? It obviously is preferable to not run sewer lines within storm drains, however, the reality is that sometimes that may be the only option. Engineers that do this usually design BMPS which would help protect the sewer line from breaking (i.e. encase the line in concrete). It should not be ADEQ's job to dictate design. Water quality does not become an issue until that line breaks and is discharged into the storm drain.

Item 15 – Earth Fissures. How can ADEQ regulate offsets from earth fissures? Earth fissures may be moving all the time. What previously may have been okay may now be a problem and vice versa. Is it considered a violation if an earth fissure is found within 100 feet? We do not see how ADEQ can regulate and enforce this."

Response: The setback table in R18-9-A312(C) only relates to setback distances from the treatment and disposal works of an on-site wastewater treatment facility. Criteria for the design and construction of sewer lines are found in the 4.01 General Permit for sewage collection systems, R18-9-E301. Specifically, R18-9-E301(d)(2)(c) addresses sewer lines that cross or are constructed in floodways. Regarding the setback of an on-site wastewater treatment facility from an earth fissure, the setback table is used to determine setbacks at the time the Notice of Intent to Discharge is submitted. No change has been made to the rule.

Commenter – James Turner: (Subsection (C) 11 in the table)

"Setbacks. #11 is confusing because of the way it is laid out. 11a states a 10' setback. Then 11b has no setback stated. If it is 10' then it should be included in 11a or the required setback put opposite 11b."

Response: The table was correct in the Department's copy of the Notice of Proposed Rulemaking when it was submitted to the Secretary of State for publishing in the *Arizona Administrative Register*. Due to different publishing

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formats, the columns did not align correctly in the *Register* publication. The Department will make certain that the table is accurate in the final rulemaking. No change has been made to the rule.

Commenter – John Power, Maricopa County Environmental Services Department: (Subsection (C))

The rule should be revised as follows: “A312.C Setback distance

Features Requiring Setbacks	Setback For An Onsite Wastewater Treatment Facility, Including Reserve Area (In Feet)	Special Provisions
11.a Downslope or cut bank.	10 ² 15'	
11.c Subsurface drip lines.	3 ² 10'	
#16 Flood Plain	50'	None
#17 Flood way	50 ² 100	None

Rationale: 11.a The severe slope requires greater distance to protect the tank. The reduction to 10 will reduce this protection.

Rationale: 11.c. Slopes greater than 15% increases the potential for horizontal movement of the water. The larger distance will reduce the potential of surfacing as water will not build upon itself.

Rationale: #16 and #17. These new categories will provide guidance to the designer for the placement of an onsite wastewater systems. These items were in the April 15, 2004 draft and have been removed without explanation.”

Response: The setback table proposed in R18-9-A312(C) was scrutinized in considerable detail by stakeholder groups, including the On-site Wastewater Advisory Committee, and was voted out as a consensus recommendation. The Department agrees with the consensus recommendation of OWAC.

Regarding the deletion of item #16 and #17, stakeholders’ groups did in fact discuss this issue and the Department did actually provide explanation. The consensus among stakeholders was that the easiest way to deal with proximity to a floodplain or floodway was through identification of such a feature during the site investigation as a surface limiting condition. The commenter is referred to R18-9-A310(C)(2)(d) for details. This approach allows engineering solutions to be developed that are tailored to the differing conditions that may exist due to proximity to a floodplain or floodway, rather than requiring strict adherence to setback distances that might be appropriate to only limited sets of field circumstances. No changes have been made to the setback table.

Commenter – Morgan Stine, Canyon Services: (Subsection (D))

“The SAR adjustment formula is extremely beneficial to provide an economic return to offset the cost for higher levels of treatment. Biological clogging of soil pore space is effected by temperature, effluent constituents, aerobic versus anaerobic soil interface conditions and other factors. We know that clean water without organic content does not clog non-expansive soils. The research to relate increases in SAR as a function of the reduction in concentration in the effluent is equivalent to allowing the mass load quantity of organic material in the effluent to be applied to the soil at a predetermined value. The research is extensive and quantifies the grams of UBOD that can be applied continuous to different soils at different climatic zones. The formula developed by Rein Laak is only one of many that uses a linear relationship to concentration versus SAR in differing soil types. The previous formula is better than the proposed revision in the excessive and polluting high SAR rates that will be allowed by secondary treated effluent disposed of by gravity in sandy soils. Both versions recognize almost nothing for the reduction in organic load in tight soils, ignoring the fact that the base SAR already accounts for the lower hydraulic conductivity of the tighter soils.”

Response: The Department appreciates the comment expressing support for the rationale of the Department’s equation in R18-9-A312(D)(3), which is to provide increasing benefit through reduced sizing of a disposal works with increasingly better wastewater treatment performance. As mentioned in a previous comment, its equation reasonably models the involved physical phenomena, but recognizes that more research is needed to refine the equation. The commenter points out some potential problems with the equation, particularly at the low hydraulic conductivity end of the equation. In higher permeability soils, the commenter has stated that the previous formula is better. The revised formula in this rulemaking does allow a greater upward adjustment for SAR, but the adjustment is not great enough to threaten groundwater quality from microbial contamination. Again, while the Department appreciates those comments and is cognizant of the issue, the Department has not received a concrete alternative to its equation that can accommodate the full range of hydraulic conductivities and treatment performance. No change has been made to the rule.

Commenter – Morgan Stine, Canyon Services: (Subsection (D))

“There is one additional item that needs to be addressed in this proposed rule. I have alerted the department to the missing pieces of rule and many stakeholder discussions have addressed the issues and sent notice to the department. It effects the on-site designers that are trying to solve sites that have numerous limiting conditions. It is common in these situations to design more than one treatment technology in series in the treatment train. Many of us have proposed calculation methods to address this ubiquitous design component, but there is nothing in this rule to provide an agreed upon method to perform this calculation. I support the language in the Coconino County TM 3.2 Treatment Technologies in Series and have empirically tested the results. Please include this method in the new rule, by reference.”

Response: The issue of how to evaluate treatment performance for treatment trains in series is one that stakeholders have continued to discuss for several years. Unfortunately, no consensus has emerged. The Department supports review of the Coconino County methodology by the On-site Wastewater Advisory Committee. If OWAC can reach consensus on this methodology, the Department can consider it for release as a substantive policy for use by the Department and delegated agencies.

Commenter – Richard Grimaldi, Pima County Environmental Services Department: John Power, Maricopa County Environmental Services Department: (Subsection (E)(3)(c)(ii))

The rule should be revised as follows: “~~If the SAR of the native soil into which the disposal works is placed is not more than 0.63 gallons per day per square foot, include~~ INCLUDE a hydraulic analysis with the Notice of Intent to Discharge, based on the dimensions of the absorption surfaces specified in R18-9-A312(B)(4)(b), showing that the soil is sufficiently permeable to conduct wastewater vertically downward and laterally without surfacing for the site conditions at the disposal works; and

Rationale: It is appropriate and necessary to require a hydraulic analysis for all systems that need to use advanced treatment in order to overcome subsurface limitations that may cause surfacing of effluent.”

Response: If extenuating circumstances exist at a site with a soil with an SAR greater than 0.63 gallons per day per square foot, delegated agencies can make a judgment as to when the applicant should submit a hydraulic analysis. No change has been made to the rule.

Commenter – Jack Bale, Wilson Bale Associates: (Subsection (D): Economic Impact Statement)

“Cost Benefit of the Rule Changes: Paragraph 8, page 184 presents a summary similar to that which accompanied the proposed rules in 2001. The cost impact of the rule package in 2001 was severely under estimated. A case can be made that the program resulting from the 2001 rules resulted in a 30 percent increase in disposal area size again with no scientific basis. The SAR equation and the design flows required by the 2001 rules are, for example, the root cause of the unnecessary size increase in this rule package.

In addition, the processing expenses associated with the 2001 rules further contribute to this cost increase. If the 2001 rules produced a cost impact equivalent to 1,000 unnecessary dollars per system installed, the impact of those rules until the present exceeds 40 million unnecessary dollars.

Because these faults in the rule were identified and solutions proposed during the extensive discussion of the current draft rule in the stakeholder meetings, the Department had an opportunity to correct the problem but chose not to. As a result of not correcting the problems associated with the 2001 rule, there is an opportunity cost associated with the current proposed rule that will exceed \$10 million annually and produce no benefit in terms of environmental quality or improved public health.

What is clear is that the cost benefit analysis for this rule is seriously flawed and unnecessary costs will continue to accrue to Arizona consumers. If the Department is not concerned that there are extra dollars being spent for no benefit in the program as currently designed, capture those dollars and put them to use as part of the compliance management portion of the program that currently received no implementation resources.”

Response: The Department disagrees with the commenter’s assertions. First, although the disposal area for some systems increased per the 2001 rule, perhaps as much as 30 percent for some systems, the design flow per bedroom decreased from 200 gallons per day to 150 gallons per day in that rule, a decrease of 25 percent. Furthermore, the SAR equation, applies only to alternative systems, which comprise fewer than 5 percent of the 11,500+ systems installed annually in Arizona.

The Department does believe that one part of the 2001 rule resulted in the design of larger disposal fields than necessary. This was due to the differing design requirements for shallow disposal trenches versus deep disposal trenches. Deep disposal trenches, which were common in Arizona prior to 2001, were penalized in size with respect to shallow trenches. Because shallow disposal trenches are often not feasible for many site and soil conditions, the only option on many sites was installation of a larger, more costly deep trench system. As mentioned in the Preamble to the 2001 rule, this approach was supported by stakeholders. The Department expressed concern to stakeholders about penalizing deep disposal trenches at that time, but ultimately the rule reflected the stakeholders’ recommendation. Experience over the last 4 years has shown that this approach was flawed.

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In this rule proposal, significant changes to the 4.02 General Permit for Septic Tanks with Disposal by Trench, Bed, Chamber Technology, or Seepage Pit have been made. These changes more than redress the flaw in the 2001 rule. First, the distinction between shallow and deep disposal fields is eliminated. All disposal fields now essentially follow the criteria established in the 2001 for the shallow disposal trench, which results in a shorter, less expensive disposal field. Secondly, in this rule proposal, the allowable absorption area per linear foot of trench is established as 11 square feet, as compared to 7 square feet (interpreted one way under the existing rule) or 9 square feet (interpreted in a clarification of the rule issued by the Department on March 9, 2001). This change to the rule can result in up to an 18-36% reduction in trench length, with roughly comparable cost savings compared to the 2001 rule.

The changes to the rule during this rulemaking were recommended to the Department by vote of both the Department-sponsored On-site Wastewater Advisory Committee and Pima County's advisory committee. This time, the Department is in full agreement with the recommendations and has no doubt the proposed changes to the 4.02 General Permit will lead to lower cost systems for homeowners.

Commenter – Angie Garcia, AG Technical Services: (Subsection (D)(2) and (E)(1))

“Page 109. The Soil Absorption Rate TABLE indicates (gallons per day per square foot)

On page 97, R18-9-A310(D)(a). The units are in gallons per square foot per day. Units need to be consistent.”

Response: R18-9-A310(D)(2)(a)(i) and (ii) have been changed to ‘gallons per day per square foot’ for consistency. This change is consistent with the units specified in subsection (E)(1).

Commenter – Kitt Farrell-Poe, Cooperative Extension: (Subsection (D)(2)(a) and (b))

“In both of these proposed rules, the tables put trenches, chambers, and pits in the same column and beds in a separate column. From the standpoint of risk (or the potential for oxygen to be limited beneath the soil treatment system), pits and beds present the same risk. There is a much higher probability of limited oxygen transfer beneath pits and beds. From Erickson and Tyler (2000):

The amount of oxygen dissolved in soil water is low and the movement of the oxygen in the water is slow. Therefore, most oxygen supplied to the soil treatment system will be as a gas. Since the pressure of the soil atmosphere is nearly uniform in the soil, mass flow contributes very little to oxygen movement. Diffusion of oxygen is the major mechanism of transport. Soil factors affecting oxygen diffusion in the gaseous will control the supply of oxygen to infiltrative surfaces.

Oxygen is required for the aerobic bacterial decomposition needed for treatment. Thus, I recommend that in each of these tables, that pits and beds have the more restricted loading rates or SARs.

Reference: Erickson J. And E.J. Tyler. 2000. Soil oxygen delivery to wastewater infiltration surfaces. In: NOWRA 2000 Conference Proceedings. National Onsite Wastewater Recycle Association. 632 Main Street, Laurel, MD 20707. pp. 91-96. [http://www.wisc.edu/sswmp/pub_04_41.pdf”

Response: The Department agrees with the technical description of oxygen flow in the second paragraph of the comment, which derives from the cited publication. In fact, its regulatory approach to trench, bed, and seepage pit wastewater loading criteria is consistent with this description.

We clearly agree with the commenter that, due to the configuration of beds (tabular), a lower wastewater loading rate is needed to supply sufficient oxygen to the bed, particularly at the interior, bottom surface of the bed where oxygen flow paths are longest and flux is lowest. However, the Department disagrees that this same situation prevails with seepage pits. Seepage pits have an entirely different configuration, one that is more similar to trenches. Seepage pits have large-diameter, vertically oriented surfaces with considerable surface area exposed to dry porous materials (i.e., sediments in Arizona's alluvial basins) that have the ability to transmit oxygen to the seepage surface. Even if oxygen flux is presumed to be lower at this depth (which the Department is not convinced of), the configuration of the seepage surface around a seepage pit (cylindrical) is fundamentally different than the isolated interior surface at the bottom of a tabular bed. In other words, oxygen flux to wastewater may be greater for a seepage pit than a bed. This seems to be supported by a University of Arizona study commissioned by the Department, which concluded: “[d]ata collected in this study indicate that the current on-site wastewater treatment regulations for seepage pit MVS [minimum vertical separation] are adequate for the protection of public health and water quality.” The Department does recognize that further research is needed, however, to definitively understand wastewater flow, oxygen flux, and biomass removal for various disposal systems and configurations. The Department expresses its support of future field and modeling studies to better understand these phenomena.

Commenter – Justin Ramsey, Environmental Hydrosystems, Ltd: (Subsection (E))

“This is the portion of the rule that deals with minimum vertical separation distance between the discharge of treated wastewater and a limiting subsurface condition. A limiting subsurface condition is a horizon that minimizes or accelerates water movement through the soil, such as groundwater, impervious soils, or bedrock. This is an integral part of the rule. Unfortunately, it is so poorly written it is very difficult to determine the requirements of the rule.

As an example, R18-9-A312(E)(c)(iii) requires increased justification for disposal components other than drip irrigation used in conjunction with a disinfection device. There is no justifiable reason for this increase bureaucratic requirement and it gives an unfair advantage to one segment of the market over all others.

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Because R18-9-A312(E) is such an important component of protection of the environment and public health, it is crucial the rule be written concisely and coherently. It is imperative ADEQ work with stakeholders to refine this portion of the rule to assure it is abided by consistently, effectively, and economically throughout the state.”

Response: The language for R18-9-A312(E) proposed in this rulemaking is much more definitive than in the 2001 rule and much less subject to misinterpretation and misuse, including misuse in over-prescribing disinfection devices when site and soil conditions may allow consideration of other less costly, less complex engineering solutions. The requirement does not give an unfair advantage to one segment of the market over all others, but is based strictly on the results of the site-investigation so that selection of the proper system is not unduly influenced by product marketing pressure. No change has been made to the rule.

Commenter – Kitt Farrell-Poe, Cooperative Extension: (Subsection (E)(1))

“In this proposed rule, trenches, chambers, and beds are in the same column and seepage pits are in a separate column. Again, from the standpoint of potential oxygen transfer limitations which in turn limits the growth and activity (and thus predation) of the aerobic bacterial population, beds and seepage pits need to be considered having the same risk, thus should be in the same column - one that provides more safety, higher minimum vertical separations.”

Response: The Department is not sure which part of the table in R18-9-A312(E)(1) the commenter is referring to. The first three columns pertain to soil absorption rate (SAR). Separate columns present SARs for trench/chamber, bed, and seepage pit. The SARs specified for a seepage pit and a trench/chamber are similar, while those for a bed are smaller. The Department stands by these numerical values on the basis of the same reasoning as explained in the Department’s response to the commenter’s comment on subsection (D)(2)(a) and (D)(2)(b) above.

The last two columns provide the minimum vertical separation (MVS) in feet between the bottom of the disposal works and the seasonal high water table. The MVS values for trench, chamber, and bed are 5 feet or 10 feet, dependent on SAR. Because the SAR is smaller for a bed, a built-in greater margin of safety is included compared to the trench/chamber. The MVS for a seepage pit is 60 feet. This value provides a very large safety factor, even accounting for potentially higher wastewater flux that might occur in a seepage pit.

The numerical values presented in the table are appropriate. No change has been made to the rule.

Commenter – Richard Grimaldi, Pima County Environmental Services Department; John Power, Maricopa County Environmental Services Department: (Subsection (E)(2))

The rule should be revised as follows: “Minimum vertical separation to the seasonal high water table for treatment and disposal works described in R18-9-E303 through R18-9-E322. If the minimum vertical separation distance to the seasonal high water table for the disposal works receiving septic tank effluent specified in subsection (E)(1) is not met, the applicant shall COMPLY WITH THE FOLLOWING:

- a. ~~employ~~ EMPLOY one or more technologies described in R18-9-E303 through R18-9-E322 to achieve a reduced concentration of harmful microorganisms, expressed as total coliform in colony forming units per 100 milliliters (cfu/100ml) delivered to native soil at the bottom of the disposal works. The applicant shall use the following table to select works that achieve a reduced total coliform concentration corresponding to the available vertical separation distance between the lowest point in the disposal works and the seasonal high water table:

[Table]

- b. INCLUDE A HYDRAULIC ANALYSIS WITH THE NOTICE OF INTENT TO DISCHARGE, BASED ON THE DIMENSIONS OF THE ABSORPTION SURFACES SPECIFIED IN R18-9-A312(B)(4)(b), SHOWING THAT THE SOIL IS SUFFICIENTLY PERMEABLE TO CONDUCT WASTEWATER VERTICALLY DOWNWARD AND laterally WITHOUT SURFACING FOR THE SITE CONDITIONS AT THE DISPOSAL WORKS.

Rationale: The seasonal high water table creates an impervious barrier that inhibits the downward migration of effluent. This creates a situation where effluent mounding and lateral migration are possible. As such, a hydraulic analysis is required in order to demonstrate surfacing will not occur.”

Response: The Department agrees with the commenters. In fact, the requirement to perform a linear loading analysis for the high water table situation was required in the 2001 rule under R18-9-A312(B)(4)(b). In this rulemaking, “linear loading analysis” is renamed “hydraulic analysis,” and the “impermeable layer” and “high water table” situations referred to in R18-9-A312(B)(4)(b) were separated into two distinct provisions, at R18-9-A312(E)(2) and A312(E)(3), respectively. When that separation was made, the requirement to perform a hydraulic analysis for the high water table situation was inadvertently omitted in the new R18-9-A312(E)(2). In this rulemaking, the language proposed by the commenters for subsection (E)(2)(b) is being adopted and is placed after the table in subsection (E)(2)(a).

Commenter – Justin Ramsey, Environmental Hydrosystems, Ltd: (Subsection (E)(3)(a))

“This section requires a ‘hydraulic analysis’ if an impervious soil or rock layer, zone of saturation or soil with more than 50 percent rock is encountered. A ‘hydraulic analysis’ can be as complex as a two-dimension computer model easily costing an additional \$5,000; to a simple linear loading rate calculation with no appreciable cost.

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This requirement is to ensure wastewater does not surface. Although I agree it is imperative that wastewater does not surface the 'hydraulic analysis' is not defined by rule and will not assure adequate protection of public health. Furthermore, without a definition of 'hydraulic analysis' each of the delegated counties will likely come up with its own definition allowing for inconsistent requirements throughout the state. Consistency is one of the de facto mandates of the 'Unified' Water Quality Permit Rules.

Therefore, I believe it is imperative the rule defines 'hydraulic analysis' to assure (1) adequate protection of public health, (2) consistent rule requirements across the state and (3) minimize unnecessary expenses to the citizens of Arizona."

Response: As mentioned in a previous response, the Department is not specifying a particular methodology for the hydraulic analysis because differing site and soil conditions may warrant differing approaches to the analysis. However, the level of complexity of a hydraulic analysis should be no more than what is needed to make the demonstration. The Department is willing to provide guidance to delegated agencies about the types of analysis that might be appropriate for different situations. No change has been made to the rule.

Commenters – Richard Grimaldi, Pima County Environmental Services Department; John Power, Maricopa County Environmental Services Department: (Subsection (E)(3)(a)(i))

The rule should be revised as follows: "The zone of soil is at least 4 feet thick, AND

Rationale: Both R18-9-A312(E)(3)(a)(i) and (ii) are required."

Response: R18-9-A312(E)(3)(a)(i) has been revised as requested.

Commenters – Richard Grimaldi, Pima County Environmental Services Department; John Power, Maricopa County Environmental Services Department: (Subsection (E)(3)(a)(ii))

The rule should be revised as follows: "IF THE DESIGN FLOW EXCEEDS 3000 GPD, the zone of soil is sufficiently permeable to conduct wastewater released from the disposal works vertically downward and laterally without causing surfacing . . .

Rationale: The presence of sufficient soil for a conventional disposal field AND for 4 feet of soil below the bottom of the disposal field (a minimum of 6.5 feet of acceptable soil for a chamber system) suggests that the concern for surfacing is not great for facilities that generate low flows such as residences. This applicability should be limited to the 4.23 General Permit."

Response: Based on the Department's historical knowledge of systems planned on sites with shallow, relatively impervious layers, the requirement to perform a hydraulic analysis must apply to all systems, regardless of design flow. This requirement, though, does not exclude the use of simpler forms of calculation for those sites which warrant such a method. As mentioned, the Department is willing to provide guidance to delegated agencies on suitable types of analysis for different types of situations. No change has been made to the rule.

Commenters – Richard Grimaldi, Pima County Environmental Services Department; John Power, Maricopa County Environmental Services Department: (Subsection (E)(3)(c)(i))

The rule should be revised as follows: "[Table]

1.5 0* 3

1 0* 2

0.5 0* 1

Rationale: This proposal provides consistency with the Table in R18-9-A312(E)(2). Additionally, the preamble erroneously states that no treatment devices treat below Log₄ Total Coliform. The Intermittent Sand Filter with bottom drain as well as the Wisconsin Mound with 2 feet of sand below the gravel layer, treat to below Log₄ Total Coliform."

Response: The table referred to in this comment establishes minimum vertical separation distances and corresponding pathogenic bacteria treatment level requirements for a limiting condition in the near subsurface that might cause surfacing of effluent. For a separation interval from 1.5 feet below land surface to just below land surface (0 feet), the Department's proposal establishes a treatment requirement to an essentially pathogen-free level. The Department acknowledges that this does not follow the same progression of logarithmic steps established for separation distances from a limiting layer that is located 3.5 feet to 2 feet below land surface. However, the Department proposed the more stringent treatment requirement for the 0 to 1.5 foot distance because it believes that treatment to a pathogen-free level is warranted to protect public health. Considering uncertainties in measurement accuracy in determining the depth to the limiting layer, the possibility that shaping or regrading of the surface might further decrease the separation distance, peaks in wastewater flow to the system, heterogeneities in soil characteristics in the near subsurface, and other factors-any of which could increase the chance of effluent reaching the surface at these shallow depths, the requirement for a pathogen-free wastewater is prudent. The Department acknowledges the error in stating that no treatment devices treat to below Log 4 Total Coliform and this error has been corrected in the Preamble, but that fact does not affect the rationale for requiring an essentially pathogen-free wastewater for a minimum separation distance from 0 to 1.5 feet. No change has been made to the rule.

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Commenters – Richard Grimaldi, Pima County Environmental Services Department; John Power, Maricopa County Environmental Services Department: (Subsection (E)(3)(c)(iii))

The rule should be revised as follows: “If a disinfection device under R18-9-E320 is proposed but is not used with surface disposal of wastewater under R18-9-E321 or ‘Category A’ drip irrigation disposal under R18-9-E322, provide a justification with the Notice of Intent to Discharge stating why the selected type of disposal works is favored over disposal under R18-9-E320 321 or R18-9-E324 322.”

Rationale: Drip irrigation disposal is addressed in R18-9-E321 and E322.”

Response: R18-9-A312(E)(3)(c)(iii) has been revised as requested.

Commenter – Joelle Wirth: (Subsection (F)(4))

“The manufacturer’s specification to override a design requirement. Should be defined as a published practice as opposed to an opinion received on letterhead. If a manufacturer is allowed to override a rule then it needs to be an application that has been proven and is repeatable.”

Response: The addition of the word “published” would not change anything in this provision because this provision defers to the Department’s rule rather than the manufacturer’s specification if there is a conflict. It does not matter whether the specification is published or on letterhead, the Department’s rule would prevail. No change has been made to the rule.

Commenter – Joelle Wirth: (Subsection (G))

“Alternative setback- this should not be allowed as it ultimately could impact property rights for areas not served by a public water facility. Allowing a designer to [sic]”

Response: The Department disagrees. The alternative setback provision allows flexibility when flexibility is necessary. R18-9-A312(G)(6)(e) gives the Department the discretion to deny an alternative setback for any justifiable cause, including a situation where installation of a drinking water well would be severely constrained or prevented.

R18-9-A313. Facility Installation, Operation, and Maintenance for On-site Wastewater Treatment Facilities

Commenter – Joelle Wirth: (Subsection (B))

“Still needs addressing: O & M should be for life of the system not just one year. There needs to be an O & M class offered for training, the Consortium one is very good.”

Response: The issue of requiring an O&M service contract for one year for alternative systems is addressed in previous responses. The Department agrees on the value of training in all aspects of on-site wastewater treatment facilities, including O&M.

R18-9-A314. Septic Tank Design, Manufacturing, and Installation for On-site Wastewater Treatment Facilities and R18-9-A315. Interceptor Design, Manufacturing, and Installation for On-site Wastewater Treatment Facilities

Commenter – Jack Bale, Wilson Bale Associates:

“Paragraphs R18-9-A314 and R18-9-A315 address septic tank and interceptor manufacturing respectively. Septic tanks provide the first level of treatment from domestic on-site systems and interceptors provide a similar function for commercial on-site applications. Manufacturing and certification requirements are needed for both types of tanks. The rules however treat the two types of equipment differently from each other and different still than the process in place for other types of equipment. Manufacturing standards are required by rule for septic tanks, but can be self-certified. Manufacturing standards are not required for interceptors and there is no certification that any standards are met. Other types of equipment undergo a Department review or certification – a third party review. Let’s assure quality in equipment in a consistent manner.”

Response: R18-9-A315(B)(1) states that applicable structural and materials requirements specified for septic tanks in R18-9-A314 apply to interceptors. The Department’s approach to materials and manufacturing standards for septic tanks, interceptors, and other treatment products is appropriate. This approach tailors the requirements for each type of device based on factors such as: 1) the level of detail in the materials and manufacturing specifications in rule (specifications for septic tanks are very detailed); 2) the frequency with which a device must be used in an installation (the Department estimates that an interceptor is required in far fewer than one percent of on-site system installations); and 3) the assurance needed that a device will operate at the specified performance value in rule (true of alternative system technologies). No change has been made to the rule.

Commenter – Tyler Smith, Yavapai Block & Precast: (Subsection (E)(4)(a))

“‘The septic tank is tested for watertightness after installation by a water test and repaired or replaced, if necessary.’ As your department is aware from your inspection of our facility on 10/30/02 by Mr. John Bateman, we have been testing all of the septic tanks manufactured at our facility, except for those that are assembled in the field, by either the water or vacuum test since 2001. This has been done by our company for the past four years on a voluntary basis in order to do our part in protecting the aquifer, and to provide our customers with products of the highest quality. This process has given us much insight and experience in the testing of septic tanks.

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The water test is a very accurate measurement of watertightness of a septic tank, but this test also has its drawbacks. First of all, it is a very cumbersome procedure to move that amount of water, and it is very time consuming. That is why we don't see the water test being used on sewer line construction (pipe & manholes) anymore. The installing contractors would obviously have to charge their customers substantially more for this procedure, since they would have more time and materials (water) into the project. The water that would be used for the test would have to be paid for in some form, either by purchasing from a water hauling company, on a utility bill, or by added pumping from a private well. This added cost would in turn be passed on to the home buyer, which will add it to their mortgage, and they will end up paying several times the original cost of the test once their mortgage is amortized."

Response: The Department appreciates the commenter's discussion of the watertightness test. The question about requiring a field watertightness test was discussed extensively during the stakeholder process, and the discussion included the issues you raise. This rulemaking adopts the consensus stakeholder recommendation to require a field watertightness test to ensure tank integrity and watertightness after installation. The Department adopted this consensus recommendation into the proposed rule. No change has been made to the rule.

Commenter – Tyler Smith, Yavapai Block & Precast: (Subsection (E)(4)(a))

"Secondly, many of the manufactured septic tanks are not designed to be water tested without the proper backfill against the side walls. The septic tank sidewall thicknesses are engineered, and designed based on having the outside soil pressure surrounding the tank to help counter the inside pressure of the effluent. Without proper backfill when water testing, you greatly increase the chances of damaging the tank. With proper backfill, the inspector will not be able to visually inspect the sidewalls of the tank for weeps, or leaks."

Response: The watertightness test criteria in R18-9-A314(E)(4) are broad enough to accommodate testing of tanks that require outside soil pressure to counter tank weight when full. The Department encourages manufacturers of such tanks to consider simple modifications to existing test methodologies for this purpose. Upon review and approval, the Department would distribute the methodologies to the regulated community and delegated agencies for their reference and use.

Commenter – Tyler Smith, Yavapai Block & Precast: (Subsection (E)(4)(a))

"Thirdly, the county health departments of Arizona would also incur cost increases on the inspection of septic systems. Because this is a very time consuming test, more inspectors will be needed to enforce this rule, which will add cost to the counties, whose budgets are already stressed. This added cost will be passed on in the form of greatly increased permit costs, even slower inspection response times, and ultimately passed on to the home buyer. This is another costly burden to our counties and to the end buyer. Many locations within our county have seen government building fees increase by 2 to 4 times over their previous level from just 2 years ago."

Response: The procedure for watertightness testing proposed in this rulemaking does not require inspection by personnel of delegated agencies. Instead, in order to obtain a Discharge Authorization, the applicant must submit a certification that the septic tank passed the watertightness test. This does not prevent personnel from a delegated agency from observing the test, but also does not require it.

Commenter – Tyler Smith, Yavapai Block & Precast: (Subsection (E)(4)(a))

"Fourthly, another concern is of water usage. With the current drought that has affected us all, water has become a major issue in our state. Every community has some kind of water conservation or even water rationing going on. The estimated gallons of water it would have taken in 2004 to water test all of the septic tanks sold by Yavapai Precast is 1,250,000 gallons of water. This is only one supplier, so you can see that it will take an enormous amount of water to water test every septic tank in the state. This would not seem to fall under the category of water conservation.

We at Yavapai Block and Precast do not oppose testing of septic tanks, we have been vacuum testing prior to delivery for four years, but feel that the proposed field water test is cumbersome, not a cost effective solution for the construction industry and end buyer, will be hard if not impossible for the counties to enforce, and not a responsible use of our limited water supply. We urge you to consider other options and technologies for this important issue that would be more cost effective, and user friendly for the citizens and taxpayers of Arizona.

Also, we would appreciate if ADEQ would correspond with the affected industry when considering new rules or rule changes. Industry should be involved in the rulemaking process so that all involved have an understanding of the costs involved to the public. Industry may also need time to comply with new rules and changes and ADEQ needs to know a realistic time frame in order for industry to be able to comply."

Response: The Department appreciates the concern about water conservation. In making their recommendation for field watertightness testing, stakeholders felt that the benefits of the test with respect to watertightness and structural stability outweighed water conservation aspects. In regard to the last comment, the Department made an extraordinary effort over the last four years to involve stakeholders, including septic tank manufacturers, in this rulemaking process. Septic tank manufacturers have attended meetings of the On-site Wastewater Advisory Committee, participated in meeting discussions, and have even made presentations to the Committee.

Commenter – Colin Bishop, Orenco Systems; Colin Bishop Systems: (Subsection (E)(4))

“Colin Bishop supports in-field watertightness testing of all tanks and is supportive of the changes made to R18-9-A314.E.4. We are pleased with this positive change. We propose the following change to language in R18-9-A314.E.4.a.:

‘The ~~applicant~~ person shall ensure that the septic tank is filled with clean water, as defined in R18-9-A310(A), ~~to the invert of the outlet and the water left standing in the tank for 24 hours~~. up into the access opening and into the riser two inches. The water shall be left standing in the septic tank for 24 hours.’

Rationale: If the septic tank is filled only to the inlet invert, a top-seam septic tank and/or riser connections can still leak. This ensures septic tank, access opening and riser integrity. All parts of the septic system must be watertight and structurally sound.”

Response: R18-9-A314(A)(2) requires the entire septic tank to be watertight. The proposed rule for field watertightness testing at R18-9-A314(E)(4) ensures that the working volume of the septic tank is watertight. This is the consensus approach recommended to the Department by the On-site Wastewater Advisory Committee. The Department does not see a compelling reason to deviate from that approach. No change has been made to the rule.

R18-9-A316. Transfer of Ownership Inspection for On-site Wastewater Treatment Facilities

Commenter – Justin Ramsey, Environmental Hydrosystems, Ltd:

“This section requires a transfer of ownership inspection anytime a property with an on-site wastewater treatment system is sold. On-site wastewater treatment systems can be complex biological or chemical treatment devices with sophisticated controls requiring skilled maintenance providers. Even the simplest of systems such as the conventional septic tanks and gravity disposal trench requires a minimal amount of maintenance to assure adequate treatment and disposal of wastewater. The transfer of ownership inspections is a step to assure a new homeowner is aware of any potential deficiencies of the treatment system.

The rule, however, requires the inspection results to be processed at the Arizona Department of Environmental Quality for all systems constructed prior to January 1, 2001. The rule requires the inspection results to be processed by a delegated authority (typically individual county health departments) for inspections done on systems installed on or after January 1, 2001.

Ironically, the inspection process and recordkeeping will be the same regardless of the date of installation. By requiring the different locations for the inspection documents to be submitted, the rule is adding unnecessary confusion to the transfer of ownership process. Subsequent homeowners will likely not know when their system was installed and therefore not be sure where to go to get copies of previous inspections. Furthermore, requiring the documents to be sent to ADEQ will make it more difficult than need be for homeowners or maintenance personnel to access the documents. It is much simpler for an individual to pick up documents from a local county health department than to have to go to downtown Phoenix and request a record search.

There is no logical reason that the delegated counties cannot be responsible for all transfers of ownership, not just systems installed on or after January 1, 2001. This requirement is adding unnecessary complexity to the transfer of ownership requirement and causing undue hardship for homeowners or maintenance personnel.”

Commenter – Joelle Wirth:

“In order for the Transfer of Ownership Process to be viable it must remain with the local delegated authorities. Counties are currently and have been performing these transactions without problems. The short form as designed does not meet the intent of the realtors nor the goals ADEQ has listed in the Preamble. The following Transfer of ownership language is from ADEQ’s preamble to the new rule proposal. It goes on to expand on the reasons for the agencies actions. The following are ADEQ’s reasons to have the Transfer of Ownership process:

1. Ensure that the septic tank is pumped at the time of property transfer.
2. Identify other maintenance or repairs needed to ensure effective operation of the system.
3. Significant benefit to the property owner by reducing the chance of septic tank failure and extending the life-time of the facility.

Services are to be provided by a market-driven person(s) meeting certain professional qualifications and successfully completing a training approved by the department. From actual forms submitted to the county the only item of the three identified by ADEQ that is done with assurance is the pumping of the tanks. The home purchaser is actually being charged a lot of money for a very low level of service that really qualifies nothing. I believe the short form needs to be re-worked to make it an essential document, or make the check list mandatory, or lastly get rid of this process completely. We have septic pumpers that have completed the NAWT Training not being able to identify the various alternate systems, their components or identify functionality of the systems. Let alone attempt to evaluate if they are properly working or in need of repair. The NAWT Training specifies that all records be researched prior to any site visit, yet the ADEQ form makes it optional. Our county has received several calls from unhappy buyers that wondered what they had really been charged for.”

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Commenter – Jack Bale, Wilson Bale Associates:

“While the rules require mandatory operation and maintenance for all on-site systems (paragraph R18-9-A313), there is no overall program designed to assure the requirements are met. Instead the rules piggy back on the resale inspection program (Paragraph R18-9-A316) which seems to be a situation where ADEQ is hoping to take advantage of requirements established by the Department of Real Estate and mortgage bankers. If the Department had an implementation strategy for the entire program or for paragraph R18-9-A313, the general O and M requirements, the duplicate requirements of R18-9-A316 and the costs it requires to do those inspections and report new buyers as new permit holders could be eliminated.

The implementation of any inspection/compliance management program raises several questions:

1. What is the purpose of submitting this information to the Department?
2. What is the Department going to do with the information?
3. How will the residential inspection program contribute to the protection human health and the environment?
4. What are the requirements for an inspector?
5. If tank manufacturers can self certify they meet requirements, why can't homeowners?
6. What is the Departments plan to insure that homeowners comply? What resources are needed and where are they coming from?

Again the rules are inequitable and flawed and seem to contribute little to the protection of public health or the environment.”

Response: The commenters are referred to the response at R18-9-A304 for background and justification on several of the concerns raised above. The Department would like to expand on its response at R18-9-A304 regarding one concern expressed by the first two commenters. The commenters ask why the Department is requiring submittal of Notice of Transfer forms to the Department for systems constructed before January 1, 2001, rather than using the process under the existing rule wherein, for systems constructed on or after January 1, 2001, submittal of the Notice of Transfer form is to the delegated agency in the applicable county. In reality, the Department actually considered the reverse-designating submittal of all Notice of Transfer forms to the Department, regardless of construction date. In the end, though, the Department retained the current process for submittal of forms for facilities constructed on or after January 1, 2001 to the applicable delegated agency. Since these facilities were constructed under the current rule in accordance with its administrative and technical requirements, the delegated agencies would be assured of having a general APP file for the facility containing the documentation required by rule. This allows the delegated agency to easily effect the change in permittee status in the file and any related database.

In many cases, information on systems constructed before January 1, 2001 is more elusive or may not exist at all. By designating the Department as the recipient of the Notice of Transfer forms for these facilities, the Department, over time, can compile this information electronically in one database more effectively than separate efforts in the 15 counties. However, the records that exist in the 15 counties will remain in conformance with the appropriate records requirement retention periods. As mentioned in the response at R18-9-A304, once the needed modifications to the permits database are completed and the associated administrative processes are running smoothly, the Department intends to delegate this function to the 15 counties. All Notice of Transfer submittals would then go to the counties, whereas the permittee and inspection information on the forms (or by electronic submittal) would be compiled into one statewide database.

The Department respectfully disagrees with the opinion of the third commenter that this inspection approach contributes little to no protection of public health and the environment. In fact, as explained in more detail in the response at R18-9-A304, implementation of this approach will provide heretofore unrealized and significant benefits in extending the operational lifetime of on-site wastewater treatment facilities and protecting public health and water quality. No other approach is feasible at this time that will provide such significant benefits at such reasonable cost.

Commenter – Kitt Farrell-Poe, Cooperative Extension: (Subsection (A)(2))

“The proposed rule provides that a person who is qualified to perform a Transfer of Ownership inspection needs to hold a certificate of training from a course recognized by the Department as sufficiently covering the information. There is no expiration date of that certificate or length of years the certificate could be. Therefore, I recommend that the certificate be current (within 2 years) or have evidence of continued education in the area of concern. In other words, the date of the certificate needs to be within two years of the current year or the eligible person needs to provide proof of continuing education.”

Response: The Department stands by its qualification requirements for inspectors of on-site wastewater treatment facilities. The Department does not believe that it is necessary to impose a requirement for an inspector to retake a course every two years. This does not mean, though, that the Department would be unwilling to revisit the requirements for effectiveness following a few years of implementation of the presale inspection program.

Commenter – Richard Grimaldi, Pima County Environmental Services Department: (Subsection (E))

The rule should be revised as follows: “The ~~transferor~~ TRANSFEROR shall complete a Notice of Transfer on a form approved by the Department and send the form with the applicable fee specified in AAC R18-14-102(C)(7)(c) ~~within 15 calendar days after~~ TO THE DEPARTMENT PRIOR TO the property transfer to:

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1. ~~The Department for transfer of a property with an on-site wastewater treatment facility for which construction was completed before January 1, 2001; or~~
2. DELETE IN ITS ENTIRETY

Rationale: The rule should refer only to the Department. Implementation of the rule should be determined within the context of applicable delegation agreements. Additionally, the Notice of Transfer submittal timeframe should be modified to allow the Department to receive the notice prior to transfer.”

Response: The Department stands by its rule language requiring submittal of the Notice of Transfer form to the Department for all facilities constructed before January 1, 2001. The Department intends to implement the program statewide on a consistent basis and then evaluate delegation of that authority to the appropriate local health or environmental agency. No change has been made to the rule.

Commenter – Lou Brown, SouthWest Alternatives: (Subsection (E))

“In Section E, the Department is requiring these inspection reports to be sent to the Department. This procedure will require realtor and/or the individual conducting the inspection to have to request this information from the Department. Proven history with the Department regarding receipt of requested information in a timely manner, takes weeks to obtain. Estimating approximately 80,000 real estate transaction a year, this would generate approximately \$4,000,000 a year to the Department. This process would be operated more expeditiously with the local delegated agencies.”

Response: Contrary to the assertion of the commenter, no information needs to be requested from the Department for a person to comply with the requirements of R18-9-A316. In fact, the Department intends to develop an Internet-based form to streamline the submittal of information required in the Notice of Transfer. This rulemaking requires the Notice of Transfer for facilities constructed before January 1, 2001 to be submitted to the Department because this is a new requirement that will involve a large number of facilities. The Department intends to implement the program statewide on a consistent basis and then evaluate delegation of that authority to the appropriate local health or environmental agency.

R18-9-A317. Nitrogen Management Area

Commenter – Sydney Hay, Arizona Mining Association:

“We continue to question the legal/statutory authority of ADEQ to designate nitrogen management areas. We also question the legal authority of ADEQ to impose special provisions on any person under a nitrogen management plan. This language appears to create the ability for ADEQ to impose legal obligations on activities that may not even be subject to the APP program.”

Response: The rule includes provision for the establishment of Nitrogen Management Areas as a mechanism to distinguish general permits in locations where permit conditions addressing nitrogen discharges are necessary from those general permits where such conditions are not necessary. The rule applies only to general permits. The authority to designate Nitrogen Management Areas is found at A.R.S. § 49-245. Subsection (C) authorizes the Department to include in rule “terms and conditions to ensure that all discharges and facilities will meet the requirements of this chapter,” which includes ensuring that a facility is in compliance with the aquifer water quality standards (AWQS). Establishment of a NMA will allow the Department to include general permit conditions addressing nitrogen discharges in those areas. The Department anticipates this will limit the need to revoke general permits to ensure compliance with the AWQS for nitrate. See A.R.S. § 49-245(C). Subsections (C)(1)(a) and (D)(3) have been changed to clarify that “special provisions” would apply to sources of nitrogen regulated under this Section. The rule has been clarified as follows:

- A. The Director may designate a new Nitrogen Management Area to control groundwater pollution by sources of nitrogen regulated by Title 49, Chapter 2, Article 3 of the Arizona Revised Statutes and not covered under an individual permit, modify the boundaries or requirements of a Nitrogen Management Area, or rescind designation of a Nitrogen Management Area.
 1. No change . . .
 2. No change . . .
- C. Final designation.
 1. If the Director designates or modifies the Nitrogen Management Area, the Department shall:
 - a. Issue or modify the Nitrogen Management Area designation and any special provisions established for the area to control groundwater pollution by sources of nitrogen regulated by Title 49, Chapter 2, Article 3 of the Arizona Revised Statutes but not covered under an individual permit. The Department shall provide notice to the mayors and members of the Board of Supervisors of all towns, cities, and counties and the directors of all sanitary districts affected by the determination;
 - b. No change
 - c. No change
 2. No change
- D. Nitrogen Management Area requirements. Within a Nitrogen Management Area:
 1. No change

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2. An agricultural operation shall use the best control measure necessary to reduce nitrogen discharge when implementing the best management practices developed under 18 A.A.C. 9, Article 4. The Director may require the owner or operator to reassess of the performance of impoundment liner systems constructed under R18-9-403 before November 12, 2005.
3. A person shall comply with any special provision established for the Nitrogen Management Area, as applicable, for their facility.

Commenter – Todd Williams, Flood Control District of Maricopa County:

“It appears that by designating a Nitrogen Management Area, ADEQ may not be allowing municipalities or areas to grow simply by not allowing new wastewater treatment plants to be built. Is this allowed under ADEQ’s authority?”

Response: The Department does not intend any designation of a Nitrogen Management Area as a proscription against new wastewater treatment plants. Our change to subsection (C)(1)(a), discussed above, makes it clear that individual aquifer protection permits are unaffected by an area’s status as a Nitrogen Management Area. In fact, in some Nitrogen Management Areas the solution to nitrogen loading by general permit facilities may be found in building new wastewater treatment capacity.

Commenter – Joelle Wirth:

“Nitrogen Management Area. This is still not defined. To propose a strict requirement that will have a significant economic impact on consumers without being able to 1. Define the parameters to not only the stakeholder group but the public at large and 2. Not be able to disclose potential Nitrogen Management areas because the criteria has not been developed and will require further time and criteria that will need to be evaluated. Only further implies that this section has not been fully studied to mandate it into rules. Further consequences of the nitrogen management designations are crossed over into the subdivision process and could routinely become an additional design concern for areas that may not ever be considered as getting a designation. The subdivision process is already subject to a very poor review process adding another undefined layer could only make it worse. There also exists the concern that a facility operating under an Individual permit may not be held to the same standards as a permittee under a General permit. The Individual permit holder could actually be the cause of the contamination and are typically much larger flows, yet a general permit within the designation could bear the brunt of corrective actions, mitigation measures, etc. The idea of involving the local authorities but as this is still in the planning format it should not be incorporated into rule.”

Response: The Department included the parameters or criteria in the rule so that everyone would know the basis for the Department’s designation of a nitrogen management area. Once the criteria are established in this rule, then designations can be made. The designation of a Nitrogen Management Area will affect future subdivisions that propose to rely on on-site wastewater treatment facilities for domestic wastewater disposal and will consequently affect the design of those facilities. The Department disagrees that individually permitted facilities are somehow held to a lesser standard when it comes to groundwater protection. Other sections of this rule provide treatment performance requirements that apply to individually permitted facilities. Individual permits establish regular monitoring and reporting requirements to ensure continued protection of groundwater quality throughout the term of the permit. It is important to involve the local authorities in the designation process because they are the ones who will be most directly affected by a designation decision and also are the ones who have the ability to take actions necessary to refute or modify the designation. No change has been made to the rule.

Commenter – Jack Bale, Wilson Bale Associates:

“The 2001 Water Quality Division rules already contain a process to identify areas with compromised water quality. It is the Water Quality Management Planning rules at A.A.C. 18-5-3. Why create a separate and unique process for identifying nitrogen polluted groundwater when another process already exists for all other pollutants? It appears that the process in the proposed rule is unnecessary.

The Water Quality Planning rules describe a cooperative process that allows the Department other state agencies, units of local government, permit holders and other stake holders to work together to identify and delineate water quality problems and to develop solutions to those problems. Why is this process inadequate to address and remedy nitrogen contaminated waters?

Paragraph R18-9-A317 is the proposed rules is a process that requires public notice by the Department but does not assure true public participation by the permit holders, management agencies and planning agencies who would participate in implementing a solution to a nitrogen groundwater contamination problem. Why is the proposed process better than the Water Quality Planning rules?

Does the state need a process in proposed rule based on unilateral action by the Department which would be used in place of the participation based Water Quality Planning rules which already exist? No.

The Water Quality Planning rules are unworkable, they should be amended or repealed before a Nitrogen Management Area Proposal is adopted.”

Response: While the Department supports the planning process envisioned under the federal Clean Water Act and the requirements under 18 A.A.C. 5, Article 3, the Department is required to protect groundwater quality under the Aquifer Protection Permit (APP) Program. Our recent experience with the Designated Planning Agencies (DPAs) has been that their focus is more on regional siting of wastewater treatment capacity than water quality. 18 A.A.C. 5,

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Article 3 provides no regulatory framework to implement or enforce the Certified Areawide Water Quality Management Plan developed by the DPAs under 18 A.A.C. 5, Article 3. The Department works with the DPAs on permitting issues and will continue to do so. There may be more opportunities to work together on issues that are common to both of us. No change has been made to the rule.

Commenter – Richard Grimaldi, Pima County Environmental Services Department; John Power, Maricopa County Environmental Services Department: (Subsection (A)(1)(h))

The rule should be revised as follows: “Location, number, and areal EXTENT of existing and potential sources of nitrogen;

Rationale: Clarification.”

Response: This term was inadvertently dropped from the proposed rulemaking. Subsection (A)(1)(h) has been amended to include the term “extent.”

Commenter – Marie Light, Tucson Water: (Subsection (D)(1))

The rule should be revised as follows: “This section identifies that discharges in a Nitrogen Management Area shall have a limit of total nitrogen of 15 mg/L. Effluent discharged to underground storage facilities which have effective soil aquifer treatment processes should be allowed to discharge effluent with higher total nitrogen concentrations, as long as the concentration in the aquifer remains below 10 mg/L. Language is recommended to include soil aquifer treatment in a NMA.

The Department shall issue a Construction Authorization, under R18-9-A301(D)(1)(c), for an onsite wastewater treatment facility only if the applicant proposes, in the Notice of Intent to Discharge, to employ one or more of the technologies allowed under R18-9-E302 through R18-9-E322 that achieves a discharge level containing not more than 15 mg/l of total nitrogen, or 10 mg/L for soil aquifer treatment processes as calculated at a horizontal plan immediately beneath the zone active disposal field treatment.’

Please note an alternative to this language is to include an exemption for underground storage facilities in the definition of ‘onsite wastewater treatment facility’.”

Response: Underground storage facilities are required to operate under an individual APP so the requirements of this Section would not apply to those facilities. Therefore, there is no need to revise the rule as recommended. No change has been made to the rule.

ARTICLE 3. AQUIFER PROTECTION PERMITS – GENERAL PERMITS

PART B. TYPE 1 GENERAL PERMITS

R18-9-B301. Type 1 General Permit

Commenter – Todd Williams, Flood Control District of Maricopa County: (Subsection (E))

“What is a navigable water? In Arizona it is difficult to visualize what a navigable water is. It may be more appropriate to use another term in its place.”

Response: Navigable water is defined in A.R.S. § 49-201(21).

Commenter – Rita Mercer: (Subsection (J))

“Would you please clarify for me whether the 1.10 General Permit applies to sewage collection system that serves downstream from the point where the daily design flow is 3000 gpd or is more than 3000 gpd?

Both the 1.10 and the 1.11 rules use is 3000 gpd language. [see, Rule p. 252] However, the preamble on p. 170 refers to language of more than 3000 gpd for the 1.10 permit. Also, the preamble for 2.05 discusses optional permit language. I was hoping you would be able to clarify the application of the 1.10 [and the 1.11] as to the gpd design flow application, actual amounts.”

Response: Both of the 1.10 and 1.11 General Permits grandfather in sewage collection systems that were in existence before January 1, 2001, the effective date of the current APP rule. That rule provided design and operation provisions for new sewage collection systems, but inadvertently did not address APP coverage for systems in operation before January 1, 2001. In this rule, the Department proposes two general APPs, the 1.10 General Permit and the 1.11 General Permit, to provide coverage for these pre-existing sewage collection systems.

The key threshold for determining which general permit may apply to a sewage collection system in operation before January 1, 2001 is the design flow. Based on stakeholder input, the Department adopted a design flow of 3000 gallons per day (gpd) as the division point to determine whether an existing sewage collection system may qualify under the 1.10 or 1.11 General Permit. The 3000 gpd design flow threshold point is determined as follows. If one starts the design flow analysis at a building drain and goes downstream, adding more service connections with increasing distance, at some point the design flow of the sewer line reaches 3000 gpd (typically based on Table 1 in the rules). Upstream of that point, the design flow is less than 3000 gpd. Downstream of that point, the design flow is equal to or greater than 3000 gpd. This 3000 gpd point is, then, the threshold point between potential coverage under the 1.10 General Permit or the 1.11 General Permit. (But please see the actual language of the 1.10 and 1.11 General Permits

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for other factors that may alter this threshold point and potential coverage under either the 1.10 or 1.11 General Permit).

For piping located downstream of the 3000 gpd threshold point and constructed prior to January 1, 2001, the 1.10 General Permit may apply. (Any systems with a design flow greater than 3000 gpd that were constructed on or after January 1, 2001 should have a 4.01 General Permit. Under the 1.10 General Permit, then, any sewage collection system infrastructure constructed before January 1, 2001, located downstream of the 3000 gpd design flow threshold, is considered grandfathered in with Aquifer Protection Permit coverage, as long as the requirements of subsections (J)(1), (J)(2), and (J)(3) in that general permit continue to be met.

For piping in a sewage collection system located upstream of 3000 gpd point of design flow, the 1.11 General Permit may apply. The 1.11 General Permit was developed to grandfather in these small systems. Another important difference in the 1.11 General Permit compared to the 1.10 General Permit is that the 1.11 general permit allows for new construction of systems with a design flow below 3000 gpd without having to submit a Notice of Intent to Discharge to the Department. As specified in R18-9-B301(K)(5), the Department defers to the requirements of local administrative authorities for review and approval of design and construction. The 1.10 General Permit specifies that the seven performance standards for sewage collection systems listed in R18-9-E301(B) still must be met, but that local building and construction codes can be used to achieve the performance standards.

In summary, the 1.11 General Permit applies to sewage collection systems with a design flow under 3000 gpd. These systems are either already in existence and constructed before January 1, 2001, or involve new construction. For new construction, this general permit defers to local authorities for review and design approval and allows the use of local building and construction codes to achieve the Department-required performance standards.

ARTICLE 3. AQUIFER PROTECTION PERMITS – GENERAL PERMITS

PART C. TYPE 2 GENERAL PERMITS

R18-9-C301. 2.01 General Permit: Drywells That Drain Areas Where Hazardous Substances Are Used, Stored, Loaded, or Treated

Commenter – Angela Lucci, City of Surprise:

“We recommend adding the definition of ‘hazardous substance’ to clarify the difference between the definition of hazardous substance as stated in R18-9-C304.”

Response: R18-9-101 states that the definitions established in A.R.S. § 49-201 apply to Articles 1, 2, 3, and 4 of this Chapter. Since hazardous substance is defined in A.R.S. § 49-201(18), including the definition in rule would be redundant. No change has been made to the rule.

Commenter – Todd Williams, Flood Control District of Maricopa County: (Subsection (A))

“What does the term drains an area refer to? Is it referring to a drainage area? Please clarify.”

Response: Yes, the phrase refers to the drainage area of the drywell. See also R18-9-102(1).

R18-9-C304. 2.04 General Permit: Drywells that Drain Areas at Motor Fuel Dispensing Facilities Where Motor Fuels Are Used, Stored, or Loaded

Commenter – Angela Lucci, City of Surprise: (Subsection (A)(3))

“We recommend keeping the phrase ‘For purposes of this section’ to clarify the difference between other uses of the term ‘hazardous substance.’”

Response: When the definition of a term is universal throughout the rulemaking, the term is defined under a general definition Section; in the case of this rulemaking, R18-9-101. However, when a term specifically relates to one part of the rules, the term is defined within that rule. Subsection (A)(3) now clarifies that the term “hazardous substance” is a definition, therefore the phrase “[f]or purposes of this Section” is redundant and has been stricken.

Commenter – Angela Lucci, City of Surprise: (Subsection (H)(1)(a))

“There is a grammatical error. The word ‘enters’ should be ‘enter.’”

Response: The word “enters” is correct because it applies to a spill. No change has been made to the rule.

R18-9-C305. 2.05 General Permit: Capacity, Management, Operation, and Maintenance of a Sewage Collection System

Commenter – Dorothy O’Brien, City of Peoria: (Subsection (E)(1)(h))

“This section states ‘[a]ny other factor necessary to determine if the CMOM Plan is sufficient.’ This is extremely vague and allows significant latitude on the part of an oversight agency. What factors will the ADEQ representative utilize to determine if all factors necessary were used in developing the CMOM Plan?”

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Response: The Department emphasizes that it recognizes the benefit to an owner of a sewage collection system operating under a CMOM Plan under this general permit. In this regard, the Department's review of a CMOM Plan would come into play if prompted by a sewage release or series of releases that trigger the need to assess the adequacy of the CMOM Plan. The rule specifies a number of factors the Department will evaluate to determine the adequacy of the CMOM Plan. It is always difficult to devise a definitive list of factors that may be examined. If the Department does consider additional factors, they could as easily support the adequacy of the plan as oppose it. Ultimately, the Department must have the latitude to consider other factors to ensure that it has enough information to make a defensible decision on the adequacy of the CMOM Plan. No change has been made to the rule.

Commenter – Dorothy O'Brien, City of Peoria: (Subsection (E)(1)(d))

"This section requires that a CMOM identify components that have insufficient capacity for a peak wet weather flow of a 10-year, 24 hour storm event. For cities that do not have combined sewers this is burdensome when developing the CMOM program."

Response: The Department recognizes that certain older sewage collection systems in Arizona have significant infiltration and inflow problems during storm events, but believes that no such systems expressly designed for combined sewage and stormwater flows exist in Arizona. Furthermore, the Department does not allow construction of such combined sewers. Therefore, in a CMOM Plan, it is important for the owner of the sewage collection system to identify reaches incapable of carrying wet weather flows. Identification of reaches with inadequate capacity is a necessary prelude to developing capital improvement and O&M measures to reduce infiltration and inflows during wet weather flows, and hence reduce the probability of sewage spills. In summary, this component of a CMOM plan is very important and should not be removed. No change has been made to rule.

Commenter – Angela Lucci, City of Surprise: Subsection (E)(4)

"The word 'endangerment' is not consistent with the word 'threat' as stated in the Item A – Definition."

Response: The difference in terminology is intentional. The term "imminent and substantial threat" is used in subsection (A) in conjunction with specific well-defined criteria to establish the identity of those sewage releases with 1) considerable potential for causing harm and 2) specific deadlines for reporting the release and associated information to the Department. The term "substantial endangerment" is used in a different context. The rule directs the Department to determine its compliance response to a sewage release based on several factors, one of which is whether the release creates a substantial endangerment to public health or the environment. This assessment does not necessarily have to correspond to the criteria used in subsection (A). It could include consideration of the magnitude of the release beyond 50 gallons or 2000 gallons, the strength of the wastewater released, the size of the exposed population, and other characteristics that might not be specifically categorized in subsection (A). Therefore, no change has been made to the rule.

ARTICLE 3. AQUIFER PROTECTION PERMITS – GENERAL PERMITS

PART D. TYPE 3 GENERAL PERMITS

R18-9-D302. 3.02 General Permit: Process Water Discharges from Water Treatment Facilities

Commenter – Angela Lucci, City of Surprise:

"We recommend adding the definition of 'impoundment' in this section."

Response: A.R.S. § 49-243(B)(1) describes the types of facilities that are regulated as surface impoundments through aquifer protection permits. The Department does not see the need to put a definition in the rule that might conflict with the coverage of this issue provided by the statute.

Commenter – Dorothy O'Brien, City of Peoria:

"This section discusses filtration backwash and discharges from sedimentation and coagulation in the water treatment process for potable use. This section requires discharges to meet the Aquifer Water Quality Standards. If the receiving wastewater treatment facility can accommodate the waste stream, or is designed to handle the waste stream and the effluent from the wastewater reclamation facility meets all the parameters of the permit, the water treatment facility should be allowed an exemption from this regulation."

Response: Disposal of filtration backwash into a sewage collection system is exempt from APP (see A.R.S. § 49-250(7)).

ARTICLE 3. AQUIFER PROTECTION PERMITS – GENERAL PERMITS

PART E. TYPE 4 GENERAL PERMITS

On-Site Systems

Commenter – Dan Smith, Arizona Water Design:

"All systems should be required to have a mandatory third party operation and maintenance for the life of the system, not just one year. Depending on the complexity of the system, inspections should be required every 2-3 years."

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In closing, I feel the rule process should go back to OWAC, the Counties and other stakeholders to put back into the rules those items that were ignored by ADEQ staff. If not, this rule will be a fight in front of GRRC. I will definitely get several designers, installer and manufactures to sign petitions opposing the current rule being brought forth by ADEQ.”

Response: The Department has addressed the issue of an O&M service contract for alternative systems in several responses in this document including the Preamble comments for R18-9-A312 by Joelle Wirth; comment on R18-9-A304 by Lowell Fagen; and R18-9-A309 comments by Lou Brown, Kitt Farrel-Poe, and Richard Grimaldi. The commenter is referred to the responses to those comments.

The Department acknowledges the opinions of this commenter, but disagrees that stakeholders were ignored and disagrees with the commenter’s suggestion to withdraw the proposed on-site system provisions from this rulemaking. As described more fully in the Preamble to this proposed rule published on January 7, 2005, years of stakeholder effort have gone into the development of these rules. The Department does not expect every person to agree with every provision of this rule. But, by and large, there is a great deal of consensus on both the Department’s approach within the rule and the specific technical and administrative provisions. Where there were differences of opinion, the Department’s strongly believes that it opted for language that not only meets the requirements of the APP statutes and makes administrative and technical sense, but serves the public interest.

Commenter – Joelle Wirth; James Harrell:

“The first concern is with the statement ADEQ makes that, ‘an on-site wastewater treatment facility poses a threat to public health and water quality if not designed, constructed and operated properly’. Although lofty in it’s intent I see very little in the rules that supports their sentiments.

First if design is so important then why are there no criteria for who can design a system. A soil evaluator now has a more rigorous requirement than previously, yet the designer is supposed to be able to interpret the soil information into a design. Anyone who can demonstrate competency can call themselves designers. We see many customers that are swayed into just one type of design because the individual they have chosen only knows one type, has a vested interest in only selling one type or can only get one type through the review process. If we had an educational and certification process I believe we could promote better designs.”

Response: The Department included qualifications for designers of on-site wastewater treatment facilities in its 2001 rule proposal. That provision turned out to be one of the most controversial in the entire APP rule proposal. The Department received more comments on it than any other provision. In the end, for the final 2001 rule, the Department developed simplified language for qualifications, which is found at R18-9-A312(A). During this rulemaking, since the issue really did not arise, the Department did not propose any further change to R18-9-A312(A). However, the Department does not object to further consideration of qualifications for system designers by its On-site Wastewater Advisory Committee.

Commenter – James Harrell:

“It appears that there is no requirement for the delegated authority to inspect construction of new systems only if they wish to do such inspections. How will there be a record for later owners to follow if there is no verification that the system is installed as approved?”

Response: Inspections during the “[p]re-construction phase and facility construction” are authorized in R18-9-A301(D)(1). Subsection (D)(1)(a) allows inspections of the site prior to construction. Subsection (D)(1)(b) allows both inspections and document reviews during the construction phase to determine conformance with the rules.

Commenter – Joelle Wirth; James Harrell:

“How would anyone know if something is ‘operated properly’? Without any requirement for on-going Operation and Maintenance this could never be achieved. The study on Aerobic Treatment Units in Yavapai by Dennis Thayer, found 95% of the ATU’s reverted back to a septic process within five years without maintenance. Many had blowers that went out, were turned off, or plants that had never been serviced. The requirement of an effluent filter on every septic tank is another example of another requirement without any thought as to the maintenance needed to keep them from becoming problematic, or just thrown away when they become clogged.

The annual inspection process that has been proposed several times is the only way to be able to ensure proper operation and provide any kind of measurements of performance. If the agency is concerned with operation and on-going performance they also need to include a number count in the Licensing Time Frame reports as to Repairs and/or Failures. The area of Operation and Maintenance is one that also would be reliant on a Service Provider. These Providers also would need on-going training and Certification to ensure competent individuals were providing quality service. The Consortium backed O & M Certification is a very good class that could easily be used as a required Certification for AZ.”

Commenter – James Harrell:

“As to the idea of proper operation, there is no requirement for continuing O&M so that after the initial one year (which violates the two year requirement of NSF for systems they certify) there is no maintenance performed and the system becomes a sepspool with no treatment to the discharge effluent. Unless there is a mandated ongoing operation

and maintenance for the life of the system there is no guarantee that the system will perform as anticipated in the rule.”

Response: The approach to O&M for on-site wastewater treatment facilities has been much discussed during stakeholder meetings, with widely varying opinions as to what is appropriate. The existing rule already requires property owners to properly operate and maintain their on-site wastewater treatment facility. The question becomes, then, what is the most effective way to ensure that this happens? In this rulemaking, the Department proposes an approach that it believes is workable and is supported by a majority of stakeholders, although as previous comments indicate, some think these measures go too far and others not far enough. In a nutshell, the Department’s approach consists of: 1) uniformly-conducted inspections of all on-site systems at the time of property transfer, and 2) demonstration of a service contract for one year for new alternative systems. These measures need to be implemented for some period of time and then assessed for effectiveness before considering further changes. The Department seeks support of both the regulated community and delegated agencies in successfully implementing these measures to improve the operation and maintenance of on-site wastewater treatment facilities and in constructively participating in later discussions about potential future changes.

Commenter – Joelle Wirth; James Harrell:

“IF ADEQ is really truly concerned with these processes they will need to re-evaluate some of the current content of the rule. They should also determine which course of action they really intend to pursue; the competent designer, a highly prescriptive code or a performance based code. It is realistic to have some permits that are prescriptive, but the current approach for our rule is highly prescriptive. In the latest go round the minimum vertical separation has become so convoluted that it is very difficult to read yet alone understand. The idea was to have the designer design for the site specific conditions, not have the rule attempt to identify all of the conditions that could occur. I think we need to get back to basics. The layout of our rule negates any aspect for performance, as it is currently tied to minimum vertical separation. But again maybe without the required O & M this could be one way to appear to be performance based while dictating a course for design.”

Response: The Department is not sure what changes to the rule the commenters are proposing. The Department’s on-site system program is administered as a series of General APPs covering more than 30 different treatment and disposal technologies that can be used in different combinations. Each technology has specified performance characteristics that factor into developing a specific design for a site. This general permit framework accommodates a wide range of site conditions and wastewater management technologies. Furthermore, under R18-9-A312(G), an applicant may propose alternative approaches to more effectively deal with site conditions as long as they result in equal or better performance. This general permit framework-with standardized site investigation methods, performance specifications for numerous technologies, and design algorithms that incorporate system performance specifications and reward better performance-contributes to a streamlined design and application process within an enforceable rule-based structure. In regard to the comment about minimum vertical separation, the Department completely disagrees that performance is negated. In fact, performance is an underlying theme in the criteria for minimum vertical separation. No change has been made to the rule.

Commenter – Joelle Wirth:

“Construction of systems as an integral part of the assurance of a sound on-site wastewater system. Once again, missing from the rule is the steps necessary to make this happen. Reliance on the designers and installers to ensure compliance is not enough to protect public health and the customer. An additional note has been placed into rule to allow for the designated authority to inspect if they deem it necessary, yet if it is important to have inspection of these systems we need additional emphasis placed upon them. I believe we need to put a greater emphasis on the inspection instead of the upfront design requirements necessary to obtain a permit. Frequently systems are changed in the construction process. Without oversight and inspection for compliance there really is no need to bother with the permitting process.

You would be surprised at the number of changes that are made during construction that are not identified on As-Built plans. The honor system does not work for this process.”

Response: The Department’s rules for on-site wastewater treatment facilities always have allowed the Department and delegated agencies to perform inspections of the construction to ensure that systems are constructed according to submitted plans. The rulemaking in no way limits that authority.

Commenter – Jake Garrett, Gila County:

“I am pleased with the process leading up to this proposed rulemaking and with the overall product produced, which is reflected in the proposed rules. I specifically address the portion relating to On-Site Wastewater Systems.

One question is raised by the adding of qualifications and training requirements for people authorized to conduct pre-sale inspections. Why is there no such requirement for a soil tester or designer? This omission must be corrected during formal rule making.

Many important changes have been proposed through a cooperative effort with stakeholder groups, of which I was an active and vocal part, and ADEQ staff. An open forum with spirited discussion and give and take, coupled with rea-

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son and practical sense have lead to a significantly improved, performance-based code that will do a better job of protecting the environment while supporting economic growth, construction and the people of Arizona.

Several areas remain to be addressed. The process of updating must resume on provisions not fully addressed, including attention to maintenance and surveillance of operating systems, once this enactment is complete. My hope is to complete the informal rulemaking process on another set of revisions in 12 to 18 months, preparing us all for formal rule making.

My compliments and thanks to Chuck Graf, Ed Swanson, and the ADEQ staff that worked on the rulemaking team.”

Response: The Department appreciates the comments acknowledging the significant stakeholder process leading up to this rule proposal. As mentioned previously, this rule reflects a great deal of stakeholder effort in achieving general consensus, even though the Department does not expect every person to agree with every provision of this rule.

The question on qualifications and training is answered in a previous response to a joint comment by Joelle Wirth and Jay Harrell in this Section. The Department will always consider potential future improvements to the rule.

R18-9-E301. 4.01 General Permit: Sewage Collection Systems

Commenter – Greg Brown, Specific Engineering LLC: (Subsection (C)(6))

“R18-9-E301(C)(6) – The operation and maintenance manual for established utilities should not be required to be on file with the Department but rather available for the Department’s review during inspections. The operation and maintenance manuals for utilities are huge and are continuously updated. This document should not be made public to ensure the security of the utility’s facilities. Also, this requirement should not be required for utilities operating under a CMOM.”

Response: The Department agrees that no added benefit is provided by requiring the submittal of an operation and maintenance manual before issuing a Discharge Authorization. More important to the Department is that the owner or operator of the sewage collection system has prepared an operation and maintenance manual and that it contains the appropriate written instructions to properly operate and maintain the system. The Department does not need a copy of the manual, but it does need to know that it exists and that it addresses all of the O&M components necessary to properly operate and maintain the system. The rule has been amended to eliminate the submittal requirement of an operation and maintenance manual and requires that the owner or operator certify that a manual exists and contains key O&M components.

Proposed subsection (C)(6) has been stricken and the remaining subsections renumbered. Proposed subsection (E)(3) has been stricken and amended as follows:

3. If the project has a design flow of more than 10,000 gallons per day, provide a final operation and maintenance plan that includes the 24-hour emergency number of the owner or operator of the system. Provide a signed certification on a form approved by the Department that:
 - a. Confirms that an operation and maintenance manual exists for the sewage collection system;
 - b. Confirms that the operation and maintenance manual addresses components of operation and maintenance specified on the certification form;
 - c. Provides the 24-hour emergency number of the owner or operator of the sewage collection system; and
 - d. Provides an address where the operation and maintenance manual is maintained and confirms that the manual is available for inspection at that address by the Department on request.

The following conforming changes have been made in subsection (F)(1):

1. Operate the new sewage collection system or expansion of an existing sewage collection system involving new construction using the operation and maintenance manual certified by the owner or operator in subsection (E)(3), to meet the performance standards specified in subsection (B), unless the permittee is operating the sewage collection system under a CMOM Plan under the general permit established in R18-9-C305;

Commenter – Ken Knickerbocker: (Subsection (D))

“This provision provides better clarification for the use of actual flow data for a sewer design.

(i) Requires a wet weather infiltration and inflow rate be added to the peak flows - based on a percentage of dry weather flow, or data for sewer design.

(i) Requires a wet weather infiltration and inflow rate be added to peak flows - based on a percentage of dry weather flow, or gal/ac.

(ii) Requires force mains and lift stations to account for inflow and infiltration.

However, (2)(e)(iii) requires that for gravity sewers, $d/D < 75\%$, which equates to approximately 90% Q/Qf. Can the I&I requirement can be established at 10 % of the overall flow, and the requirements are satisfied? 90% Q/Qf is standard design practice for gravity lines, but not for lift stations or force mains. However, with dual pump systems, which are standard practice in Maricopa County, the station will meet this requirement. In rural areas, the stations must be designed accordingly. These rules need to be more explicitly in defining I&I flows.”

Commenter – Robert Anderson, Homebuilders Association: (Subsection (D))

“R18-9-E301.D. addresses the use of actual flow data for sewer design. Subsection (i) requires a wet weather infiltration and inflow (I&I) rate be added to the peak flows based on a percentage of dry weather flow, or gal/ac. (ii) requires force mains and lift stations to account for inflow and infiltration. However, (2)(e)(iii) requires that for gravity sewers, $d/D < 75\%$, which equates to approximately 90% Q/Qf. Can the I&I requirement be established at 10 % of the overall flow, and the requirements are satisfied? 90% Q/Qf is standard design practice for gravity lines, but not for lift stations and force mains. However, with dual pump systems, which are standard practice in Maricopa County, the station will meet this requirement. In rural areas, the stations must be designed accordingly. The rules need to be more explicit in defining I&I flows.”

Response: The goal of subsection (D)(2)(e)(iii) and the requirement for $d/D < 0.75$ is to allow sewer gases to flow through the top of the pipe cross section most of the year. Since Arizona gets sporadic storms, this “empty” space can be used to handle the wet weather flows. That is why subsection (D)(1)(i) states that the pipe flowing full must be able to accommodate the peak wet weather flow. Wet weather flow could, in fact, be just 10 percent of the dry weather flow in some cases, but the Department does not want to limit the wet weather flow value to a fixed value. The wet weather flow value could vary depending on area of the state, data developed by a sewage collection system operator specific to that system, or a particular engineering reference work for sewage collection system design. No change has been made to the rule.

Commenter – Karl Tobin, David Evans & Associates: (Subsection (D)(1))

“Subsection (D)(1) will now require that a wet weather infiltration and inflow rate be included when determining design flows for sewage collection systems. Also, subsection (D)(2)(e)(iii) will now require that the ratio of flow depth in the pipe to the diameter of the pipe not exceed 0.75 in peak dry weather flows conditions.

What is the intent of the wet weather infiltration factor under (D)(1), if pipe capacity under (D)(2)(e)(iii) is going to be determined by dry weather flows?

What methods will be accepted for determining the wet weather infiltration rate? The current requirement in (D)(1) just requires the rate to be a percentage of peak dry weather flow or gallons per acre.

Are flow velocities for gravity sewer lines to be determined using wet weather or dry weather flows?”

Response: The sewer pipe flowing full must accommodate the peak wet weather flow as well as the peak dry weather flow. The intent of subsection (D)(2)(e)(iii), which contains the $d/D < 0.75$ criteria, is to ensure that sewer gases stay inside the pipe during dry weather flows. Beyond that, the selection of a wet weather infiltration and inflow rate is really a decision by the designer relying on best professional judgment and knowledge of local conditions. The designer must have leeway to consider these factors to ensure that the facility will really meet the projected flows. The Department intends that maximum flow velocities pertain to peak dry weather flow, which is attained on a diurnal or similar repetitive cycle. In actuality, if velocity is calculated for both $d/D=1$ (full pipe) and $d/D=0.75$ (three-quarters full), the velocity differences are small. No change has been made to the rule.

Commenter – Mike Bunch, Pima County Wastewater Management: (Subsection (D)(2)(e)(iii))

“iii. The ratio of flow depth in the pipe to the diameter of the pipe shall not exceed 0.75 in peak dry weather flow conditions”;

‘Full Flow’ is not clearly defined. Section 2,e, iii of 4.01 mentions the term but does not specifically define it. We recommend the following definition: ‘Full Flow’ is 2 fps at $.75d/D$ in peak dry weather flow conditions.”

Response: As described in the previous response, the Department intends that the maximum velocities are pertinent to $d/D = 0.75$ (three-quarters flow) during dry weather peak flow. In truth, velocity differences are small: between three-quarters and full pipe flow. No change has been made to the rule.

Commenter – Greg Brown, Specific Engineering LLC: (Subsection (D)(2)(h)(i) & (ii))

“These references are not needed since ADEQ is incorporating the ‘Uniform Standard Specifications for Public Works Construction,’ published by the Maricopa Association of Governments, and the ‘Standard Specifications for Public Improvements’ and ‘Standard Details for Public Improvements’ published jointly by Pima County Wastewater Management and City of Tucson in their entirety in (D)(1)(b).”

Response: The Department agrees that the specifications listed in subsections (D)(2)(h)(i) and (ii) are included in the incorporated matter in subsection (D)(1)(b). However, stakeholders will benefit from the specific listing of the appropriate trenching and bedding specifications that apply. Subsection (D)(2)(h) has been revised as follows:

- h. Indicate trenching and bedding details applicable for each pipe material and size in the design plans. ~~Sewer Unless the Department approved alternative design standards or specifications under subsection (D)(1)(c), the applicant shall place and bed the sewer lines shall be placed in trenches and bedded following the specifications established in subsections (D)(2)(h)(i) and (D)(2)(h)(ii) “Trench Excavation, Backfilling, and Compaction” (Section 601) revised 2004, published by the Maricopa Association of Governments; and “Rigid Pipe Bedding for Sanitary Sewers” (WWM 104) revised July 2002, and “Flexible Pipe Bedding for Sanitary Sewers” (WWM 105) revised July 2002, published by Pima County Wastewater Management. This~~*

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material is part of the material incorporated by reference in subsection (D)(1)(b). This material is incorporated by reference and does not include any later amendments or editions of the incorporated matter. Copies of the incorporated material are available for inspection at the Department of Environmental Quality and the Office of the Secretary of State, or may be obtained from the Maricopa Association of Governments, 302 N. 1st Avenue, Suite 300, Phoenix, Arizona 85003, or from Pima County Wastewater Management, 201 N. Stone Avenue, Tucson, Arizona 85701-1207.

- i. *“Trench Excavation, Backfilling, and Compaction” (Section 601), published in the “Uniform Standard Specifications for Public Works Construction” published by the Maricopa Association of Governments, revisions through 2000; and*
- ii. *“Rigid Pipe Bedding for Sanitary Sewers” (WWM 104), and “Flexible Pipe Bedding for Sanitary Sewers” (WWM 105), published by Pima County Wastewater Management, revised November 1994.*

Commenter Greg Brown, Specific Engineering LLC: (Subsection (D)(3)(c))

“These references are not needed since ADEQ is incorporating the ‘Uniform Standard Specifications for Public Works Construction,’ published by the Maricopa Association of Governments, and the ‘Standard Specifications for Public Improvements’ and ‘Standard Details for Public Improvements’ published jointly by Pima County Wastewater Management and City of Tucson in their entirety in (D)(1)(b).”

Response: The Department agrees that the specifications listed in subsections (D)(3)(c) are included in the incorporated matter in subsection (D)(1)(b). However, stakeholders will benefit from the specific listing of the appropriate trenching and bedding specifications that apply. Subsection (D)(3)(c) has been revised as follows:

- c. *The applicant shall ensure that manhole design is consistent with “Pre-cast Concrete Sewer Manhole” (#420) #420-1, revised January 1, 2004 and #420-2, revised January 1, 2001, “Offset Manhole for 8” – 30” Pipe” (#421) #421 (1998), and “Brick Sewer Manhole and Cover Frame Adjustment” (#422) #422, revised January 1, 2001, 1998, including revisions through 2000, published by the Maricopa Association of Governments; and “Manholes and Appurtenant Items” (WWM 201 through WWM 211, except WWM 204, 205, and 206), revised July 2002, Standard Details for Public Improvements, 1994 Edition, published by Pima County Wastewater Management. This material is part of the material incorporated by reference in subsection (D)(1)(b).*

Commenter – Greg Brown, Specific Engineering LLC: (Subsection (D)(4))

“The language ‘If justified’ should be removed. It is arbitrary and capricious. Who is to make the justification? On what basis is it to be justified? Why does the use of a force main need to be justified for the purpose of regulatory review?”

Response: The Department agrees that the phrase, “If justified,” should be deleted. The Department accepts that a design engineer’s professional responsibility includes analyzing the advantages and disadvantages of gravity systems and force mains in the context of site-specific circumstances and making the appropriate decision regarding the type of sewage conveyance. The Department, as part of its substantive review of the Notice of Intent to Discharge, always has the opportunity to ask for further information justifying the selection of a force main over a gravity sewer if the force main is not appropriate for the site-specific circumstances. Subsection (D)(4) has been amended as follows:

- 4. *Force mains. If it is impractical to install a gravity sewer line system, an applicant may install a force main if it meets the following design, installation, and testing requirements. The applicant shall:*

Commenter – Greg Brown, Specific Engineering LLC: (Subsection (D)(4)(a))

“The maximum flow velocity of 7 feet should be removed unless there is some reason it is necessary to prevent the transmission of sewage borne diseases or required for the protection of human health and the environment.”

Response: The maximum flow velocity of 7 feet per second is intended to ensure sewer pipe integrity by controlling pipe erosion. Pipe erosion could eventually lead to pipe breakthrough and release of sewage to the subsurface and possibly groundwater. The very next (second) sentence of R18-9-E301(D)(4)(a) allows a designer to justify to the Department a velocity greater than 7 feet per second using the alternative design process specified in R18-9-A312(G). Therefore, there is no restriction to designing for a velocity greater than 7 feet per second provided it is adequately justified. No change has been made to rule.

Commenter – Greg Brown, Specific Engineering LLC: (Subsection (D)(4)(h))

“This requirement should be removed. No section of a force main will emit odors. Pipes are designed not to leak. Odor problems are at the point of discharge and the lift station.”

Response: Odor control for lift stations is addressed R18-9-E301(D)(5)(c)(vi). Regarding force mains, control of odors through air release valves or at the point of discharge into a gravity main should be a design consideration where odors would cause a problem, such as in residential and commercial areas. The Department disagrees that this provision should be removed; therefore, no change has been made to the rule.

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Commenter – Dorothy O'Brien, City of Peoria: (Subsection (D)(4)(h))

"This section discusses the need for immediate standby power. The City suggests the addition of a redundant level control be required."

Response: The Department agrees. Failure of either the primary power source or the controls for monitoring the wastewater level in the lift station would have the identical adverse impact of causing a sewage spill. Redundancy in both the power source and wastewater level controls is needed to minimize the chance of a sewage spill. The Department has modified subsection (D)(5)(f) as follows:

~~g.f.~~ For lift stations receiving an average flow of more than 10,000 gallons per day, include a standby power source and redundant wastewater level controls in the lift station design that ~~may be put into~~ will provide immediate service immediately and remain available for 24 hours per day if the main power source or controls fail.

R18-9-E302. 4.02 General Permit: Septic Tank with Disposal by Trench, Bed, Chamber Technology, or Seepage Pit, Less Than 3000 Gallons Per Day Design Flow

Commenter – Lou Brown, SouthWest Alternatives:

"Prior to the 2001 Rule, a conventional septic system could be installed for approximately \$3,000 for your typical 3-Bedroom residence. Since the rule change, that installation cost has increase to over \$4,000. The Eljen system could be installed for under \$5,000 (average) in 1999, but has increase to \$6,500 - \$7,000 since the rule change. This change has created a financial impact on the property owner utilizing these systems and well has the decrease in product sales. Not only has the rule change increased the costs of installation, it also has increase the size of the area of disposal fields. This increase causes a larger area of excavation to install these systems, scarring more property of the owner, and requiring that owner to have to maintain a larger area where his septic system is. The ultimate result of all these changes impacts the property owner, the tax-paying citizen of this state, the most."

Response: The commenter is directed to changes in R18-9-A312(D) and the table at R18-9-E302(C)(2)(c), entry 4, which essentially address the concerns expressed by reducing the size of a typical disposal field. The Department's response to comments on R18-9-A312(D) earlier in this document provides explanation.

Commenter – Robert Anderson, Homebuilders Association:

"Septic systems. A primary focus of the rulemaking is to restrict the ability of developers to rely on septic systems. While we understand the Department's concerns about possible groundwater impacts from septic systems, we believe that the Department should evaluate the direction of the rules to be certain that only those systems which pose an environmental threat are being limited, and that the imposition of restrictions be done in a phased manner to limit impacts on the permitting process."

Response: The Department disagrees that its primary focus is to restrict the ability of developers to rely on septic systems. In reality, septic tanks are a viable method of sewage treatment, and the Department's rules are geared to ensure that public health and water quality are protected when they are used.

Commenter – Lee Starks, Advanced Drainage Systems:

"ADS supports the proposed revision of R18-9-E302. We specifically support those changes proposed in subsection (C)(4), which refers to leaching chambers such as those we manufacture and market in Arizona. As proposed, subsection (C)(4)(a) will be revised in part by changing the multiplier in the sizing equation from '1.43' to '1.8'. This change to '1.8' from '1.43' is more than justified by recently performed studies at the Colorado School of Mines. Additionally, proposed revisions to the sizing equation in (C)(4)(a) include a redefinition of the bottom area ('B') component. Defining the 'B' component in the equation with the use of the words 'exterior width of the bottom', as proposed, rather than 'nominal width of the open bottom absorption surface', will result in greater consistency in sizing of chamber systems from county to county throughout the State.

Furthermore, ADS continues to support subsection (C)(4)(c) in its entirety, which ensures that the sidewall of the chamber provides at least 35% open area in order to obtain sidewall credit, and prohibits the use of filter fabric or other geotextile against the sidewall openings. Requiring a minimum of 35% open area in order to obtain sidewall credit and prohibiting the use of fabric against the sidewall surface area are both essential to the performance of a chamber system and its longevity."

Response: The Department appreciates the comments supporting these changes.

Commenter – Joelle Wirth:

"The removal of the distinction between shallow and deep. We object to the change back. The Department has given no reason as to why they moved forward with this change. It was primarily only the request of Pima County for this change. Each time the design criteria is changed it is at a great cost to the local authorities. All of the paperwork has to be re-formatted and revised, procedure packets need to be redone. All this involves staff time and printing and paper expense. Not to mention the customer service aspect of trying to re-train and educate clients with the new requirements. Change is okay but the yoyo effect is unacceptable. We received multiple complaints in 2001 with the first change and now we are reverting back to the past practices, professionally this will only further instill in the pub-

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lic's minds that ADEQ cannot hold its course in the decision making process. Our cliental does not have a problem with the current process as defined. Yet will be penalized through the transition. Again, the shallow versus deep concept for wastewater disposal is understood from as a scientific process. To place the wastewater at a shallower depth to allow better oxygen transfer to occur has been proven in demonstration sites and research. Despite the concerns of the group ADEQ decided to disregard nation-wide standards for their own inside opinion."

Response: The Department refers the commenter to a previous response at R18-9-A312(D), which provides explanation of the change. The Department does not believe that a need to redo forms is a compelling reason to retain the status quo, when the current approach is flawed and the changes proposed in this rulemaking are supported by a very large consensus of stakeholders.

Commenter – Joelle Wirth:

"It is also strongly felt that this general permit should have been broken down into just a tank permit and making the disposal section an additional permit. The logic being that not all systems need a disposal permit."

Response: The vast majority of the 11,000+ on-site systems permitted in Arizona per year are conventional systems that combine a septic tank with a disposal field. Currently, both the septic tank and disposal field are permitted under a single general permit, R18-9-E302. It makes no sense to split this into two general permits and then process two general permits instead of one 11,000+ times a year. No change has been made to the rule.

Commenter – Dan Smith, Arizona Water Design:

"The distinction between shallow and deep disposal should not have been removed. The merit of this is understood from the onsite industry nationwide. It is a proven scientific process that says discharging wastewater at a shallower depth allows better oxygen transfer to occur, thus better soil absorption. Despite the concerns of OWAC and other professionals, ADEQ has disregarded nationwide standards due to their ignorance."

Response: The Department has responded to this issue earlier in this document. Contrary to the commenter's assertion, this change is supported by OWAC and many other professionals. No change has been made to the rule.

Commenter Kitt Farrell-Poe, Cooperative Extension: (Subsection (C)(2))

"Deep Trenches (trenches greater than 4-ft deep) & Soil Evaluation Methods

There is no direct rule regarding this concern, perhaps R18-9-E30(C)(2) addresses my concerns. Although the code permits up to 11 sq ft of trench absorption area, it does not prohibit trenches deeper than 4 foot. There are many, many trenches in this state much greater than 4 feet. There are two points to be made:

1) For trenches over 4 feet deep, excavations become increasingly less stable and safe. Will a soil evaluator enter a trench that is 8 feet to 10 feet deep? If you cannot enter a pit because of safety reasons, you cannot determine texture, color, structure or redox features (mottles that indicate wetness). All of these must be accurately evaluated to determine system design criteria. In AZ with very red soils, most observation of redox features will be subtle (can be seen at arms length). If sites cannot be evaluated via up-close visual investigation, I would suggest that the code only allow for the percolation test for sizing deep trenches (trenches greater than 4 feet).

2) For trenches over 4 feet deep, the oxygen transfer becomes increasingly slower which causes these trenches to have the same oxygen limiting status as pits and beds, as discussed in the section **Soil Absorption Rates for Various Soil Treatment Systems**. Again, Erickson and Tyler conclude that "the soil component of the wastewater infiltration [soil treatment] system should be large, shallow, narrow, and have separated infiltration areas to maximize oxygen supply."

Response: The commenter is correct that many trenches in the state (probably more then one-half) are greater than 4 feet deep. The soil evaluator should know applicable safety regulations and can always use borings if a trench is unsafe. Regarding the shallow versus deep trench issue, the Department has addressed this in several previous comments. No change has been made to the rule.

Commenter – James Turner: (Subsection (C)(2)(c))

"The maximum depth of 48 below the disposal pipe does not seem to be based on logic. At least nobody at Pima County or State representatives will/can state why it is 48 Trench absorption area of 11 sq. ft. also controls. By holding the 11 sq. ft. I can design an absorption depth of 48 between 3 from the ground surface and 7' from the ground surface. Why then is it not allowable to put 60 of absorption depth between 2 from ground to 7 from ground? The 11 sq. ft. would still hold. I merely look for a logical explanation other than 'that's the way the rule is written.'"

Response: The Department proposed 11square feet per linear foot as a reasonable trench absorption area and stakeholders generally agreed. While a certain amount of subjectivity is inherent in this professional judgment, the selection of 11 square feet is an incremental change that balances the actual absorption area needed during both low flow and higher flow (surcharging) periods without compelling construction of unrealistically long trenches. In the Department's opinion, allowing a sidewall greater than 48 inches would yield an undesirable situation in which construction of shorter trenches subject to frequent surcharge conditions would be allowed.

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Commenter – John Power, Maricopa County Environmental Services Department: (Subsection (C)(3)(a))

The rule should be revised as follows: “Beds. An applicant shall:

- a. If a bed is installed ~~instead of a trench, ensure that the area of each bed is at least 50% greater than the tabular dimensions required for a trench.~~ use the soil absorption rate specified in R18-9-A312(D) for ‘SAR, Bed.’ The applicant may, in computing the bed bottom absorption area, include ~~a~~ the bed bottom and the perimeter sidewall area ~~BETWEEN 12 AND 36 INCHES~~ below the disposal line pipe.;

Rationale: This will allow consistent application of calculating disposal area for beds, trenches, and chambers. The bed area sizing is adjusted in R18-9-A312(D).”

Response: The Department agrees and has changed this rule for consistency as follows:

- a. If a bed is installed, ~~instead of a trench, ensure that the area of each bed is at least 50% greater than the tabular dimensions required for a trench.~~ use the soil absorption rate specified in R18-9-A312(D) for ‘SAR, Bed.’ The applicant may, in computing the bed bottom absorption area, include ~~a~~ the bed bottom and the perimeter sidewall area ~~between 12 and 36 inches~~ not more than 36 inches below the disposal ~~line~~ pipe.;

R18-9-E303. 4.03 General Permit: Composting Toilet, Less Than 3000 Gallons Per Day Design Flow

Commenter – Dan Smith, Arizona Water Design:

“This section discusses the use of greywater but there is no cross-reference to R18-9-711, the reuse rules for greywater. The reuse rule allows surface discharge of the greywater, however, E303 requires the greywater & kitchen sink waste to be treated to secondary standards before it can be discharged to the subsurface. This is inconsistent with the reuse rules and an unfair burden to people who want to save limited water they may have. There needs to be credit given to the greywater, both in terms of minimal vertical separation and to a soil application rate.”

Commenter – Joelle Wirth:

This section discusses the use of greywater but missing from the discussion are the short comings of R18-9-711 the reuse rules for grey water. 711 fails to identify concerns which would hinder the use of greywater in wet and cold climates year round, fails to address the potential vector concerns for an unregulated discharge and does not consider any type of soil application rate for the loading of soils. Although 711 is separate form this section the cross linkage for the General Permit makes it necessary to identify.

Response: The first commenter is incorrect in stating that this provision does not cross-reference the gray water requirements. R18-9-E303(A)(3)(a) states that compliance with the gray water provisions in 18 A.A.C. 9, Article 7, is required. This citation includes not only the household gray water general permit at R18-9-711, but the general permit for gray water flows up to 3000 gallons per day at R18-9-719. The first commenter is also incorrect in stating that the provisions of this general permit are inconsistent with the reuse rules, which include requirements for gray water. As just mentioned, R18-9-E303(a)(3)(a) requires compliance with the gray water requirements.

Regarding the second comment, the Department does not believe there are significant shortcomings to the gray water requirements at R18-9-711. In any case, the gray water rules are not the subject of this rulemaking.

R18-9-E304. 4.04 General Permit: Pressure Distribution System, Less Than 3000 Gallons Per Day Design Flow

Commenter – John Power, Maricopa County Environmental Services Department: (Subsection (A))

The rule should be revised as follows: “A 4.04 General Permit allows pressurized distribution of wastewater treated to a level equal to or better than that provided by a 4.02 General Permit septic tank specified in R18-9-E302(B).

1. Definition. For purposes of this Section, a ~~pressure~~ Pressure distribution system’ means a tank, pump **OR SIPHON**, controls, and piping that conducts wastewater under pressure in controlled amounts and intervals to ~~a disposal field, bed, trench,~~ bed or trench or other means of disposal distribution authorized by a general permit for an onsite wastewater treatment facility.

Rationale: Siphons do send controlled amounts of water to the disposal area over time and should be included as a design option. The added language would not change the intent of the rule.”

Response: Siphon performance is significantly influenced by site conditions, wastewater pretreatment and other design considerations that limit its applicability. A siphon may be installed following the process in R18-9-A312(G) if it achieves equal or better performance compared with the general permit requirement, or addresses site or system conditions more satisfactorily than the Article 3 rule. No change has been made to the proposed rule.

Commenters – Richard Grimaldi, Pima County Environmental Services Department; John Power, Maricopa County Environmental Services Department: (Subsection (B)(1))

The rule should be revised as follows: “~~Disurses~~ **DISPERSES** wastewater so that:

Rationale: Proposed language conforms to other sections of the rule.”

Response: The Department agrees and has made the change.

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R18-9-E307. 4.07 General Permit: Lined Evapotranspiration Bed, Less Than 3000 Gallons Per Day Design Flow

Commenter – Richard Grimaldi, Pima County Environmental Services Department; John Power, Maricopa County Environmental Services Department: (Subsection (E)(7))

The rule should be revised as follows: “Install at least ~~one~~ TWO observation ~~port~~ PORTS to allow determination of the depth to the liquid surface of wastewater within the evapotranspiration bed;

Rationale: Proposed language conforms with R18-9-E306 which also requires two observation ports.”

Response: The Department agrees that the requirements for these two, similar general permit technologies should be consistent. R18-9-E307(E)(7) has been revised as follows:

~~6-7.~~ *Install at least ~~one~~ two observation ~~port~~ ports to allow determination of the depth to the liquid surface of wastewater within the evapotranspiration bed;*

R18-9-E309. 4.09 General Permit: Engineered Pad System, Less Than 3000 Gallons Per Day Design Flow (Subsection (B)(1)(d)) and

R18-9-E315. 4.15 General Permit: Aerobic System Less Than 3000 Gallons Per Day Design Flow (Subsection (B)(2)(d))

Commenter – Colin Bishop, Orenco Systems -- Colin Bishop Systems:

“We propose the following change to language in R18-9-E309.B.1.d (Engineered Pad System) and R18-9-E315.B.2.d (Aerobic System meeting 60/60 BOD/TSS):

‘Total coliform level of 10,000,000 (Log10 ~~6-7~~) colony forming units per 100 milliliters, 95th percentile.’

Rationale: A two log reduction from septic tank effluent (R18-9-E302.B) is not justified. Many of the treatment technologies which produce significantly better treated effluent are only afforded a three log reduction from septic tank effluent. Both the Engineered Pad System and 60/60 BOD/TSS Aerobic System provide slightly better than septic tank effluent and this should be accurately reflected.”

Response: Receipt of appropriate, third-party test data for a treatment technology can be considered by the Department to adjust performance under R18-9-A309(E). No change has been made to the rule.

R18-9-E310. 4.10 General Permit: Intermittent Sand Filter, Less Than 3000 Gallons Per Day Design Flow and R18-9-E319. General Permit: Sand Lined Trench, Less Than 3000 Gallons Per Day Design Flow

Commenter – Morgan Stine, Canyon Services:

“Intermittent Sand Filters and Sand Lined Trenches. The surface application rate to the sand media is well documented in the industry from numerous sources. This rate for the sand specified is 1.2 gallons per square foot per day. The proposed rule changes it to 1.0, this will increase the cost of a sand filter to the resident by \$2250 each filter. The increase will make this option uneconomical and I wish to see this changed to 1.2 before the rule is adopted.”

Response: The change proposed from 1.2 to 1.0 gallons per square foot per day for the intermittent filter is to ensure equivalent operational life as the other general permit technologies that receive septic tank effluent evenly distributed by a low-pressure distribution onto a sand bed infiltration surface. The addition of 5.6 cubic yards of sand filter material for a 3 bedroom dwelling, which is the difference in sand volume between the 1.2 and 1.0 gallon per day per square foot loading rates, is considered sufficient by the Department to achieve the equivalence for a 20-year operational life. The additional sand filter material cost, excluding delivery charge, is less than \$100.00. The additional cost of other materials and equipment is estimated to be significantly less than \$500.00, excluding delivery charges. The 1.0 gallon per day per square foot wastewater loading rate at the sand bed infiltration surface by low pressure, uniform distribution is specified in the existing rule for sand lined trench and Wisconsin Mound technologies at R18-9-E319(D)(2)(b) and R18-9-E308(D)(2)(a). A greater surface application rate could cause premature fouling of a sand bed filter infiltration surface, which would require opening the filter bed, problem diagnosis and repair, most likely exceeding \$1,500.00, plus the cost of proper disposal of the fouled sand bed material. No change has been made to the rule.

R18-9-E312. 4.12 General Permit: Textile Filter, Less Than 3000 Gallons Per Day Design Flow

Commenter – Colin Bishop, Orenco Systems -- Colin Bishop Systems: (Subsection (A)(3))

“We propose the following change to language in R18-9-E312.A.3:

‘An applicant may use a textile filter if nitrogen reduction is desired or to overcome surface or subsurface limiting condition(s) ~~as an alternative to a sand filter if delivering sand with the required properties is difficult or expensive.~~’

Rationale: Whether a sand filter is fiscally feasible or not has no bearing on use of a textile filter as a choice for a homeowner.”

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Response: The Department agrees with the point of the comment. The Department has changed the applicability language for the textile filter in R18-9-A312(A)(3) to conform with similar language for the intermittent sand filter in R18-9-E310(A)(2), as follows:

3. *An applicant may use a textile filter if nitrogen reduction is desired ~~or as an alternative to a sand filter if delivering sand with the required properties is difficult or expensive and:~~*
 - a. The native soil is excessively permeable.*
 - b. There is little native soil overlying fractured or excessively permeable rock, or*
 - c. A reduction in setback distances or minimum vertical separation is desired.*

Commenter – Colin Bishop, Orenco Systems -- Colin Bishop Systems: (Subsection (C)(5))

“We propose the language in R18-9-E312.C.5. be stricken.

Rationale: This condition is not specifically stated in sections R18-9-E302 through R18-9-E322 universally. Either each section should state this as a condition, or none of them should state this as a condition.”

Response: The commenter is mistaken that this general permit is the only one requiring submittal of operation and maintenance requirements with the Notice of Intent to Discharge to achieve a 20-year operational lifetime. In fact, this submittal is required for treatment technologies that rely on controls and devices to provide mechanical energy inputs (see the general permits at R18-9-E315 and R18-9-E316). No change has been made to the rule.

Commenter Colin Bishop, Orenco Systems -- Colin Bishop Systems: (Subsection (D)(2))

“We propose the following change to language in R18-9-E312.D.2.

‘The septic tank effluent, as defined in R18-9-E302.B, ~~wastewater~~ is delivered to the textile filter by ~~gravity flow~~ or a pump;’

Rationale: Textile filters provide treatment past a septic tank, so the septic tank effluent numbers listed in R18-9-E302.B should be identified. Also, a textile filter is always dosed via a pump, never by gravity.”

Response: The proposed language is for the generic application of the treatment technology which may be utilized with or without a wastewater pump. A listed product will specify the model number and applicable specifications for gravity or pumped flow. No change has been made to the rule.

R18-9-E315. 4.15 General Permit: Aerobic System Less Than 3000 Gallons Per Day Design Flow

Commenter – Frank Moltz, Cromaglass Corp:

“The section regulating Sequential Batch Reactors (R18-9-E321) has been removed. We believe this section is needed since SBR technology is very different than that of standard aerobic systems. The primary difference is the batch system, by its nature, eliminates the possibility of flow-through problems, typical of aerobic systems. There are many additional differences which distinguish modern SBR technology from a plain aerobic design. These important differences should be recognized and evaluated on their own distinct merits. We encourage the Department to reinstate this section. Cromaglass believes that our technology is much advanced compared to that of an aerobic design and should be recognized in the approved ‘Proprietary Product’ classification.

We also find the section referring to denitrification confusing. The section relating to performance (on page 300) states 53 mg/L is a standard. Is this level of total nitrogen acceptable or is 15 mg/L the acceptable level when denitrification is required?

The Cromaglass denitrification performance has been proven both by 3rd party testing and Arizona monitoring. Arizona DEQ required the system installed on the Watters property to go through Experimental Status and after the required period of testing and monitoring, DEQ agreed it met the required nitrogen reduction standards. This study and other tests have proven the systems ability to produce effluent that meets your standards. Cromaglass requests ADEQ to list our systems under the Proprietary Product Classification.”

Response: The rule allows for the listing of products based on wastewater treatment performance documented by independent, third party testing. The proposed R18-9-E315 (B)(2) rule will allow for listing of products that do not fully satisfy the performance limits in ANSI/NSF Standard 40, including several of the smaller Cromaglass treatment units. Improved removal of nitrogen to below 53 mg/L can be approved for specific projects if the Notice of Intent to Discharge provides the information required in R18-9-E315 (C)(6), including representative data from the “Watters property” facility. No change has been made to the rule.

Commenter – Dan Smith, Arizona Water Design: (Subsection (B)(2))

“Low Performance/MicroBubble/Aerob-A-Jet Technology. This is not a proven technology like other aerobic treatment plants. Where did the testing data & qualifications come from to show this meets the same standards as aerobic plants? Why have certain ADEQ members taken an interest in endorsing a specific products. There have been other manufacturers have been turned away from the process.”

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Commenter Joelle Wirth:

“Low Performance/MicroBubble/Aerob-a-Jet Technology. Did the comparatively cost-effective and Simple to Operate qualifications come from third party testing or sufficient demonstration data? Was the performance numbers derived from third party testing? Is 60/60 enough of a performance criteria for highly permeable conditions? It seems that ADEQ has taken an interest in endorsing a product while many other manufacturer’s have been turned away from the process. Singulair Textile Filter, Zable Textile Filter, etc.”

Response: The Department has not approved any specific products by this rulemaking. Specific products may be approved under the process specified in R18-9-A309(E). The Department added the alternative performance criteria to allow consideration for listing of products for use in certain situations, particularly in retrofit situations, where the use of other products may be impractical or overly expensive. See also the response to the next comment. No change has been made to the rule.

Commenter – Colin Bishop, Orenco Systems -- Colin Bishop Systems: (Subsection (B)(2))

“We propose the following change to language in R18-9-E315.B.2:

‘An applicant may use an aerobic system, as a pre-treatment technology only, that meets the following ~~less stringent~~ performance criteria if the aerobic technology is listed by the Department under R18-9-A309(E) and the Department bases its review and listing on corroborating third party data ~~technology being comparatively cost effective and simple to operate when compared to other aerobic technologies.~~’

Rationale: The market will determine what is cost effective and what is not. ADEQ should not place language in the rule that is merely opinion. The statement ‘comparatively cost effective and simple to operate’ is an opinion. Other treatment technologies are required to provide third party test data and this technology should be the same.

Lastly, this technology should be used as a pretreatment technology, not as a stand-alone treatment system. Some of the manufacturers of this technology use it in this capacity only.”

Response: The goal for inclusion of R18-9-E315(B)(2) performance criteria is to provide, in part, treatment flexibility to satisfy the need for performance restoration for existing systems by using economical, simple-to-operate treatment technology. Any treatment technology listed under R18-9-E315(B)(1) or (B)(2) will be based on test data by independent, third party testing. Products that have successfully completed the ANSI/NSF Standard 40 testing, will continue to be eligible for listing for the performance specified in R18-9-E315(B)(1). Products that do not fully satisfy the performance limits in ANSI/NSF Standard 40 will be considered for listing for the performance specified in R18-9-E315(B)(2). In both cases, the Notice of Intent to Discharge requirements of R18-9-E315(C)(3) requires submittal of evidence of performance criteria specified in R18-9-E315(B)(1) or (2) as applicable. For a technology reviewed for compliance with R18-9-E315(B)(2), not only must the performance criteria be met, based on third-party data, but the Department would assess the comparative cost and simplicity of operation of the technology. The inclusion of R18-9-E315(B)(2) performance criteria allows the use of an alternative treatment technology to economically restore performance of a system that has declined due to age, misuse or other confounding indications. No change has been made to the rule.

Commenter – Todd Christianson: (Subsection (B)(2))

“Any technology fitting this application must be used as pretreatment only, not an integral part of the treatment process.

There is no place in the rule for evaluation of cost effectiveness and operational simplicity for any other technology. It should be struck in this section, or ADEQ must evaluate all systems with respect to this criteria, and list them in their particular permit sections.

The effluent quality of Log 7 is acceptable, anything else is just not proven.

2. An applicant may use an aerobic system for pretreatment that meets the following criteria if the aerobic system is listed by the Department under R18-9-A309(E) ~~due to the ability of the technology to provide enhanced cost effectiveness and operational simplicity.~~”

Response: As explained in the two previous comments, the goal for inclusion of R18-9-E315(B)(2) performance criteria is to provide, in part, treatment flexibility to satisfy the need for performance restoration for existing systems by using economical, simple-to-operate treatment technology. The Department agrees that substituting the Log₁₀ 7 treatment performance for the proposed Log₁₀ 6 value in R18-9-E315(B)(2)(d) will contribute to the goal and makes the following change:

- d. Total coliform level of 10,000,000 (Log₁₀ 7) colony forming units per 100 milliliters, 95th percentile.

Commenter – Colin Bishop, Orenco Systems -- Colin Bishop Systems: (Subsection (D)(1))

“We propose the following change to language in R18-9-E315.D.1.:

‘The wastewater is delivered to the aerobic treatment unit ~~by gravity flow either directly or~~ by a lift pump.’”

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Rationale: ATUs are the only technology allowed to discharge partially treated wastewater. This is in conflict with language in R18-9-A312.B.4.e.ii, which states, ‘Contain wastewater that is incompletely treated or cannot be released by the disposal works to the native soil.’

Wastewater can flow through the trash tank (primary treatment), through the ATU unit and then to the disposal works whether ‘mechanical introduction of oxygen,’ as specified in R18-9-E315.A.1.a., is present or not.”

Response: There are applications where a gravity flow between an aerobic treatment works and a disposal works will function properly if the applicable design, installation and operational requirements of the 4.15 General Permit are satisfied. A lift pump and other design, installation and operational features could be used to achieve fail-safe wastewater control. No change has been made to the rule.

Commenter – Todd Christianson: (Subsection (D))

“The products listed in section B.2. should not be allowed to be used in series with the same or similar products within the same section. This would give a designer the opportunity to use multiple configurations of the same product, in series, and reduce the waste strength to a level significantly less than the product is meant to perform.

This can be eliminated by allowing the product to be used in series with another permit E303-E322, as pretreatment, but not with similar products in E315.B.2.

5. Equipment with performance criteria specified in subsection (B)(2) must be used only as a pretreatment device, which cannot be used in series with same, or similar products from subsection (B)(2)”

Response: The general permit framework authorizes technologies to be used separately or in combination where appropriate to address soil and site conditions. While use of the same treatment technology in series is currently unforeseen, this option should not be prohibited. No change has been made to the rule.

R18-9-E319. 4.19 General Permit: Sand Lined Trench, Less Than 3000 Gallons Per Day Design Flow

Commenter – Lanny Nichols, Nichols On-Site Engineering LLC:

“Without these changes a highly effective, affordable alternative on-site treatment system known as sand lines trenches will likely become obsolete. I hope that this is unintentional and will be corrected as recommended below. I have brought up the need for these changes at several PDEQ advisory committee meetings and ADEQ personnel have ignored them. I believe their reasoning is faulty and without scientific backing. For this treatment/disposal method the State has clearly underestimated the treatment capability of the system and consequently has made the design criteria overly conservative. I hope at this late stage that these recommended changes can be made to Section R18-9-319 of the Code.

First, ADEQ differentiates between the treatment performance of an intermittent sand filter and bottomless sand lined trenches or bottomless intermittent sand filters. I have not seen research in literature to justify this differentiation. The State of Washington’s recommended standards has the following treatment levels for sand lined trenches: ‘ a thirty-day average of less than 10 mg/l of BOD and 10 mg/l of TSS and a thirty-day average of less than 800 fecal coliform/ 100 mg’. ADEQ is proposing a TSS and BOD level of 20 mg/l and a total coliform level of Log₁₀ 5. I’m not sure how the total vs fecal coliform levels relate, but clearly ADEQ is underestimating the treatment capability of sand lined trenches. The EPA’s On-Site manual does not differentiate between intermittent sand filters and so-called bottomless filters and shows reduction in fecal coliform levels to between 10¹ and 10³ (see page 3-29). Therefore, I propose that section R18-9-319 B. be changed to have the treatment level achieved by sand lined trenches be 10 mg/l for both TSS and BOD and that the level of fecal coliform be changed to 10³. These standards would be equal to the effluent quality provided by an intermittent sand filter. Likewise, the bottomless intermittent sand filter standard should be the same as the intermittent sand filter with underdrain. If not, please justify the differences by siting research.

Secondly, as a result of correcting the above treatment standards, the required minimum vertical separation (MVS) requirements for sand lined trenches (and bottomless intermittent sand filters) would be changed to the same as for intermittent sand filters. Note, the State of Washington only has a 1 ft MVS to seasonal high groundwater, creviced or porous bedrock or a layer of impermeable soil or bedrock. The EPA Manual (pages 4-6 and 4-7) states that separation distances can be reduced (down to 12’ to 18’) when there is additional treatment (above that of a septic tank alone) and uniform distribution of the effluent, as is the case with sand lined trenches which require pressure distribution.

Thirdly, the design of the sand lined trench per Section R18-9-E319, D. 2. i. should allow the use of sidewall absorption. If the State does not allow the use of sidewall absorption in the calculation of trench sizing, the trenches become unacceptably long because the absorption area per sq ft is reduced from 7 sq ft to 3 sq ft per linear foot, causing the trench length to increase up to 230% that of a standard leachfield trench. Standard leachfields are allowed to use sidewall absorption and they are less likely to have effluent contact the sidewalls. Until the bottom of standard leachfields become clogged, most of the absorption is through the trench bottom. In contrast, sand lined trenches provide a medium for effluent dispersal that wicks effluent in all directions provided the application produces unsaturated flow through the sand, which it should since the system is timed dosed at a very low application rate (1.0 gpd). Note, the sand required for sand lined trenches is the same as that required in ET beds (designed to maximize wicking). How can the State credit sidewall absorption for a chamber system that will not have sidewall absorption until it is near failing and not for a sand lined trench which provides good effluent-sidewall contact? Furthermore, the treatment provided by this system will not be short-circuited by sidewall absorption or by partial, intermittent flooding of the

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trenches. Sidewall absorption by suitable native soil (i.e. no limiting conditions present) will provide an effluent treatment equal to that of the sand and provide final effluent disposal (dispersal into the soil). The distance traveled by the effluent through a filtering medium to the limiting condition is therefore not reduced. Finally, according to the EPA Manual (page 4-49) 'most of the biochemical treatment occurs within approximately 6' of the filter surface'. Therefore, occasional flooding of the trench bottom will not adversely effect effluent treatment. I therefore recommend that paragraph i. be revised to read ... native soil effective absorption area at the trench bottom and sidewalls (provided the sidewalls contain no limiting soil conditions). ...

If these changes are not made, there will be no incentive to use sand lined trenches since the State will be allowing the use of a chamber disposal field with as little as 5 ft of soil above a limiting condition – 12' chamber height, with 4' MVS below (backfill could be provided with an above grade cap). As I understand the proposed code, you would need a minimum of 5 1/2' of soil for a capped sand lined trench. In addition, assuming the same soil conditions, the sand lined trench would be much longer since it would be sized based on 3 sq ft of absorption per linear ft vs 5 sq ft per linear ft for the chamber trench."

Response: The technical criteria for the Department's rules applicable to intermittent sand filter, bottomless intermittent sand filters and sand lined trenches were developed prior to January 2001 through a stakeholder effort. The hearing record for that rulemaking contains explanations of the performance topic. The use of the 1.0 gallon per day per square foot loading rate for an evenly loaded, sand bed infiltration surface has been adapted from the Washington State program guideline. Even though the commenter stated that he brought up this issue at the PDEQ advisory committee process, he did not say whether a consensus recommendation was ever developed by the committee. The Department encourages the commenter to continue to use the local stakeholder process to address this type of complex issue to ensure that it is considered by those having extensive knowledge and experience on the topic. No change has been made to the rule.

Commenter – John Power, Maricopa County Environmental Services Department: (Subsections (A) and (D)(3))

"A 4.19 General Permit allows a sand lined trench receiving wastewater treated to a level equal to or better than that provided by a 4.02 General Permit septic tank specified in R18-9-E302(B)."

The rule should be revised as follows: "(1)(b). Wastewater dispersed throughout the media by pressure distribution technology as specified in R18-9-E304 using a timer-controlled pump **OR SIPHON** in periodic uniform doses that maintain unsaturated flow conditions, and

E319(D)(3).The applicant shall ensure that the dosing system consists of a timer-controlled pump **OR SIPHON**, electrical components, and distribution network and that:

Rationale: Siphons do send controlled amounts of water to the disposal area over time and should be included as a design option. The added language would not change the intent of the rule."

Response: Siphon performance is significantly influenced by site conditions, wastewater pretreatment and other design considerations that limit its applicability. A siphon may be installed following the process in R18-9-A312(G) if it achieves equal or better performance compared with the general permit requirement, or addresses site or system conditions more satisfactorily than specified in Article 3. No change has been made to the rule.

Commenter – Richard Grimaldi, Pima County Environmental Services Department: (Subsection (B)(4))

The rule should be revised as follows: "Total coliform level of ~~100,000 (Log₁₀ 5)~~ 1000 (Log₁₀ 3) colony forming units per 100 milliliters, 95th percentile.

Rationale: Proposed language conforms with R18-9-E308(B)(1)(d) and R18-9-E308(D)(6)(a), which state that the default performance value for a Wisconsin Mound with 24 inches of C33-03 media is Log₁₀ 3. R18-9-E319(D) specifies that a sand lined trench must have at least 24 inches of C33-03 media below the gravel layer, so the sand lined trench also treats total coliform to Log₁₀ 3."

Response: The sand lined trench technology in R18-9-E319 closely resembles the bottomless sand filter technology in R18-9-E310. Consequently, the treatment performance values for evenly distributed septic tank effluent in R18-9-E310(B)(2)(d) and R18-9-E319(B)(4) are the same. No change has been made to the rule.

Commenter – Morgan Stine, Canyon Services: (Subsection (D)(2))

"Two times the effective depth of the trench sidewall height allows adequate separation and only when a site has extremely small suitable land areas available does the 5 feet minimum distance cause a problem. The current rule allows five feet between distribution pipes, which is more like 2 feet as a minimum between trench sidewalls. This change from 2 feet minimum to 5 feet minimum between trench sidewalls will have a serious impact on the designer's ability to conform with rule and is unnecessary. Please allow the proposed rule to read two times the effective depth and leave the minimum at 5 feet between distribution pipes or without a minimum separation between sidewalls other than twice the effective depth."

Response: The commenter is mistaken that the change in minimum separation distance between trench sidewalls is from 2 feet to 5 feet. In fact, the change is from 4 feet to 5 feet. This follows from the requirement in the original rule (unchanged in this rule at R18-9-E319(D)(2)(d)) that the "depth of sand below the gravel layer containing the

distribution system is at least 24 inches.” Since the separation distance is two times this depth, the distance was 4 feet. In this rulemaking, the Department changed this minimum separation distance from 4 feet to 5 feet to conform with other similar general permitted technologies in the rule. If the difference between 4 feet and 5 feet is critical in an installation, the designer can always justify it under the procedure allowed by R18-9-A312(G). No change has been made to the rule.

R18-9-E320. 4.20 General Permit: Disinfection Devices, Less Than 3000 Gallons Per Day Design Flow

Commenters – Dan Smith, Arizona Water Design; Joelle Wirth:

“The Low Performance Aerobic needs to be included under the prohibitions of disinfection. The inferior quality of effluent from this product should not allow a designer an option of submitting an 312 G with the use of disinfection to discharge closer to a limiting layer. There is no proven third party testing to justify it. This was discussed at the OWAC meetings.”

Response: The assertion in this comment is incorrect. Wastewater to a disinfection device must meet the treatment performance specified in R18-9-E320(D)(1)(a), which is a minimum TSS of 30 mg/l and BOD of 30 mg/l. The type of technology referred to by the commenter, which is covered under the 4.15 General Permit at R18-9-E315(B)(2), cannot be used with a disinfection device as its specified minimum performance is a TSS of 60 mg/l and BOD of 60 mg/l. No change has been made to the rule.

Commenter – Greg Brown, Specific Engineering LLC: (Subsection (C)(1))

“The language ‘fail-safe’ should be removed. Since the adoption of the rules in 2001 no clear definition or example of a fail-safe wastewater control or operational process has been presented. This language is arbitrary and capricious and provides no guidance for the reviewers or designer. This language has lead to many confrontations between delegated agencies, designers, and ADEQ since it was first adopted in 2001.”

Response: The Department does not agree with the comment. The Department has provided written guidance in the “Fail-safe Mechanisms for On-Site Wastewater Treatment Facilities” revised 5-13-03, on what can be considered fail-safe for the purpose of reducing health and environmental risk for wastewater disposal in sensitive circumstances. The guidance discusses design, installation, and operational measures. No change has been made to the rule.

R18-9-E322. 4.22 General Permit: Subsurface Drip Irrigation Disposal, Less Than 3000 Gallons Per Day Design Flow

Commenter – Mike Steelman, FloTech Wastewater Systems: (Subsection (D)(14)(a) through (g))

“A number of years ago, I developed a system for installing subsurface drip disposal line for alternative wastewater system effluent disposal which alleviated problems encountered in rocky mountain soil. Mr. Swanson thought the system was good enough to incorporate into rule. However, as I read the rule amendment pertaining to this system, I find many difficulties with the present language.

The rules in the section which describe Shaded Leach Trench construction for drip irrigation lines deviates significantly from how I originated the system.

As you recall, I developed the Shaded Leach Trench system to cope with installing drip irrigation lines in difficult mountain soils. The system has proven highly successful, and you and I even set up a field test to demonstrate their effectiveness.

However, the new rules do not describe the manner in which the trenches should be installed. I would have thought that you might have contacted me if you did not fully understand how the trenches were constructed, or that you might have arranged a field installation demonstration to fully understand the technique before implementing it in rule.

Please consider these points:

- a. I never construct trenches 18’ wide. I construct them 24’ wide to conform with Geoflow’s 24’ on center placement recommendation.
- b. Trenches are typically about 18’ deep, but can vary from 12’ to 24’ depending on rocks, roots, etc. Why would you say ‘top surfaces level to + 2’ per 100’ ? A backhoe can’t possibly construct anything within those tolerances, and no one is going to shoot in ‘top surfaces’ with a level. In any case, a beneficial aspect of Shaded Leach Trenches (SLT’s) is that they don’t have to be exactly level. Actually, there’s nothing in APP rules that say drip irrigation lines have to be level. We do try to follow land contours as closely as possible, and I believe this is important. However even if there is a slope, because of the small amount of effluent expelled at each drip emitter, there is little overall migration downslope.
- c. The trench is NEVER filled with a ‘mixture’ of decomposed granite and C33 sand. I don’t know where this idea came from, but it is WRONG! I did mention the use of C33 sand as a replacement for decomposed granite (DG) where DG is not available. But I never advocated mixing the two. There is no need for this. Why would you require that? Not only is C33 sand expensive compared to DG, it would be extremely difficult to mix with a backhoe onsite. It would be an expensive waste of time, you would lose much valuable

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- material, and there is no need for it. In other words, THERE IS NO MIX! Please delete this concept. No one will ever do it and you destroy the simplicity of the system which is what makes it so practical.
- d. Driplines are NOT placed 'in the fill mix'. The driplines are placed at the bottom outside edges of the trench, approximately 2' apart, and then covered with about 6' of DG. Natural fill is then placed over the DG fill (or shading) and driplines. The proposed rule says 'the trench is filled with a mixture...'. If the trench is filled to the top, and then driplines are placed 1'-3' below the top surface of the fill mix, the driplines are now 1'-3' below surface level. This does not conform to rule which requires driplines to be at least 12' deep. When the driplines are placed in the bottom of the trench, they are 18' deep which is appropriate. This provides protection from the backhoe running over the trenches when necessary, and provides a good degree of frost protection.
 - e. Six inches of DG are placed over the driplines, and then the trench is backfilled with natural fill. But a backhoe cannot readily fill the trenches to an 'elevation of 1'-3' above the native soil finished grade'. Unless you have worked in the field with a backhoe on a regular basis, you wouldn't know this. It sounds good in theory, but field experience tells a different story. There is no need for such a provision. The area over the SLT's does not subside over time.
 - f. We do install observation ports, but there is no need for them. This is another idea which sounds good in theory, but doesn't work and makes trenches more difficult to install as the backhoe has to work carefully around the observation ports when backfilling. This simply adds to the time and expense. Also, observation ports don't work because even if there was temporarily excess effluent in a trench, the odds that effluent will collect where you placed the observation port are essentially zero. Trenches are never perfectly level, not even to within + 6' per 100'. But the system is so robust, it doesn't matter. And if there was a problem and surfacing occurred, why would you need an observation port? It is obvious there is a failure. The only reason I have ever seen surfacing is because a dripline is broken and must be repaired, in which case the owner usually calls me and I dig down and repair the line. Even when a line breaks, there is surfacing right over the break and nothing is seen in the observation port. So there is no need for observation ports.
 - g. This one is correct. We always maintain 24' between trenches. But then, why would you make a trench 18' wide while leaving 24' between trenches (Rule 14a)? Just a question.

Thank you for leaving the soil absorption area at 4 sq ft per lineal foot. That corresponds to Geoflow's recommendation on spacing and has worked well for us. Because of the large absorptive ability of SLT's, I feel certain the fields could be reduced by 30% - 40% and still have a large safety factor.

The rule regarding Shaded Leach Trenches, as currently written, should probably be deleted if they aren't written with an understanding of how the system works.

Please make sure the changes are made as the way the Shaded Leach Trench section is written now, its essentially useless and I will have to submit an A312G every time I submit a set of plans, the same way I do now. Or worst case scenario, I would be disallowed from doing them completely."

Response: In the Notice of Proposed Rulemaking published on January 7, 2005, the Department, in R18-9-E322(D)(14), proposed criteria for a new configuration for subsurface drip irrigation termed the shaded trench. The language proposed at that time was:

14. If drip irrigation components are used for a disposal works using a shaded trench constructed in native soil, the following requirements are met:
- a. The trench is between 18 and 24 inches wide;
 - b. The trench is between 18 and 20 inches deep with the bottom and top surfaces level to ± 2 inches per 100 feet length;
 - c. The trench is filled with a mixture of decomposed granite and C-33 sand, and composition and placement of the mix are specified on the construction drawing;
 - d. Two driplines are placed in the fill mix, 1 to 3 inches below the top surface of the fill mix and position 2 to 6 inches from each sidewall;
 - e. Six to 8 inches of back fill is placed over the fill mix to an elevation of 1 to 3 inches above the native soil finished grade; and
 - f. Observation ports are placed at both ends of each shaded trench to confirm the saturated wastewater level during operation; and
 - g. A separation distance of 24 inches or more is maintained between each trench; and

In this rulemaking, R18-9-E322(D)(14) has been refined to incorporate the commenter's general design and construction comments. For clarity, the revised language is shown in its entirety below:

14. If drip irrigation components are used for a disposal works using a shaded trench constructed in native soil, the following requirements are met:
- a. The trench is between 12 and 24 inches wide;
 - b. The trench bottom is between 12 and 30 inches below the original grade of native soil and level to

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within 2 inches per 100 feet of length:

- c. Two driplines are positioned in the bottom of the trench, not more than 4 inches from each sidewall;*
- d. The trench with the positioned driplines is filled to a depth of 6 to 10 inches with decomposed granite or C-33 sand or a mixture of both, with mixture composition, if applicable, and placement specified on the construction drawing;*
- e. A minimum of 8 inches of backfill is placed over the decomposed granite or C-33 sand fill to an elevation of 1 to 3 inches above the native soil finished grade;*
- f. Observation ports are placed at both ends of each shaded trench to confirm the saturated wastewater level during operation; and*
- g. A separation distance of 24 inches or more is maintained between the nearest sidewall of an adjacent trench; and*

The revised language contains several dimensional and installation changes to match the criteria in the rule to the way shaded trenches are actually designed and constructed. In addition, some items are reordered to reflect the logical sequence of construction. The Department did not incorporate all of the commenter's suggestions, as some are very detailed and too limiting to allow adjustment to the multitude of site and soil conditions that may be encountered. For example, hand tools might be necessary to assure precise elevation controls for proper wastewater flow where a backhoe would be inadequate.

Commenters – Richard Grimaldi, Pima County Environmental Services Department; John Power, Maricopa County Environmental Services Department: (Subsection (D)(14)(g))

The rule should be revised as follows: "A separation distance of 24 inches or more is maintained between ~~each~~ trench SIDEWALLS; and

Rationale: Clarification."

Response: The Department agrees and has made the change proposed by the commenters.

Commenter – Richard Grimaldi, Pima County Environmental Services Department; John Power, Maricopa County Environmental Services Department: (Subsection (D)(15)(b))

The rule should be revised as follows: "For all other designs, the enclosed horizontal area resulting by drawing a perimeter that extends ~~two feet~~ ONE FOOT beyond all emitters and connecting drip lines, less any interior area that is more than ~~2 feet~~ ONE FOOT ~~from~~ FROM an emitter or drip line.

Rationale: If two feet on each side of the emitter or drip line is allowed, then the total allowable disposal area could be as high as 16 square feet per emitter. It is also in conflict with R18-9-E322(D)(8)(a) which establishes spacing requirements. The change to one foot from the drip line or emitter reduces the absorption area to 4 square feet per emitter and conforms to both the emitter and drip line spacing requirements."

Response: The Department agrees with the substance of the comment and has rewritten this subsection to provide a clearer methodology for calculating the absorption area, which will reduce any potential misapplication.

- b. For all other designs, the number of emitters times an area for each emitter where the emitter area is a square centered on each emitter with the side dimension equal to the emitter separation distance selected by the designer in accordance with R18-9-E322(D)(9)(a), excluding all areas of overlap of adjacent squares.*

Table 1 Unit Design Flows

Commenter – Angela Lucci, City of Surprise

"In Table 1 - Unit Design Flows, will DEQ identify the number of persons per dwelling unit for determining sewage treatment facility design flow? What is the guideline for calculating sewage treatment facility capacity based on a certain number of people per dwelling? The table does not clarify how many people to estimate per dwelling."

Response: The Department does not intend to specify the number of persons per dwelling unit. The number of people per dwelling can vary from community to community and within different parts of a community. This factor may be derived from census data or site-specific studies. No change has been made to the rule.

ARTICLE 4. NITROGEN MANAGEMENT GENERAL PERMITS

Commenters – Wade Accomazzo & Jeannette Fish, Maricopa County Farm Bureau:

"The Bureau expresses concern over uncertainties in the section of the rule governing existing dairies and feedlots that do not plan to relocate within the next five years. We believe the rule is unclear in delineating a means by which these producers can demonstrate that they are not contributing to nitrate levels in groundwater in the area in which they are located.

We believe that these dairies and feedlots should not be required to expend large sums of money to demonstrate that their manure handling systems are, indeed, functioning properly.

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In fact, we contend that burden of proof should rest with the agency that demands control measures be taken. It is one of the fundamentals of our American system that a person should not have to prove compliance without solid indicators that they have caused a problem.”

Response: The Department will evaluate the conditions listed in subsection R18-9-403(B)(2)(b) to determine if sufficient evidence exists to require a CAFO owner or operator to reassess liner integrity of any impoundments. If the Department has substantial information to indicate that the CAFO was causing or contributing to an exceedance of an Aquifer Water Quality Standard for a nitrogen pollutant at the point of compliance determined under A.R.S. § 49-244, it is appropriate that the owner or operator perform a reassessment of their impoundments to demonstrate either that the liners meet the performance criteria in the rule or that liner upgrade is necessary. The stakeholders asked that the operational life of the facility be a consideration in the event that the reassessment indicated that the impoundment liners required an upgrade. Requiring liner retrofitting of existing impoundments for operations that are likely to cease in the near future may not make economical sense depending on the specifics of the situation. If the CAFO will move within a relatively short period of time (less than 5 years) then requiring retrofitting of existing impoundments may not be reasonable. No change has been made to the rule.

Commenter – Joe Sigg, Arizona Farm Bureau:

“CAFO General Permit Revisions.

(1) With respect to process, I am disappointed. The department has guidance for this issue under 49-247 and 248, and in fact, agreed to have a Best Management Practices (BMP) committee appointed by the Governor to formulate this portion of the rule. To date, the committee has not even been formed. The department’s preface to rulemaking indicates an informal process that has extended over three years, but here we are with a proposed rule, with a comment period ending at business close today, without a formal vetting by a BMP committee.

This is important as it would have added integrity, authenticity, more acceptability and more assurance that a new regulatory foray is based upon reason rather than by reaction. Difficulties encountered in structuring the process, do not negate the process.

It would appear that after the fact, the department will allow the BMP committee, once structured, to meet and comment to the Director, but it remains the process seems to be out of sequence for creation of a rule.

(2) As to substance of the rule, some specific comments were passed to the department today, requesting that some adjustments in process are needed where regulation might catch up with those grandfathered, as well as some further thoughts be given to the requirements for final remediation when the containment structure is permanently closed.”

Response: 1) A.R.S. § 49-248 establishes a Best Management Practices Advisory Committee for Concentrated Animal Feeding Operations (CAFOs) to develop and recommend best management practices to the Director. This committee met extensively during development of the original general permit adopted January 4, 1991. The committee approved an Agricultural Best Management Practices Handbook (1988 BMP Handbook) published by the Department in 1988 that describes the technical details of the committee’s recommendations regarding BMPs. This handbook formed the basis for the simplified narrative BMPs enumerated in the original rule. The committee has not met since that rule was adopted. The Governor has reappointed new members to the committee as provided by A.R.S. § 49-248(D). The committee met three times regarding this rulemaking including receiving a briefing packet with the 1988 Handbook, and a presentation by Department staff, with responses to questions about this rulemaking.

The Department’s intent in revising the CAFO rule in subsections R18-9-403(A)(2) and R18-9-403(B) is to add some specificity regarding use of liners at these facilities because we are aware of many that may be unlined and discharging. R18-9-403 (1) and (2) in the original rule establish the objective to “minimize the discharge of any nitrogen pollutant.” Further discussion of the use of lining for impoundments is contained in the 1988 BMP Handbook. The Department met with stakeholders on several occasions to discuss proposed changes to the general permit. In these discussions, the Department referred to a technical guidance document produced by the Natural Resource Conservation Service of the U.S. Dept. of Agriculture (NRCS guidelines) that describes all of the considerations one must use in designing a CAFO impoundment. The 1988 BMP Handbook references Bulletin W210-7-12, December 1986 issued by U.S. Dept of Agriculture Soil Conservation Service. The NRCS was established in 1994 and replaced the Soil Conservation Service. With respect to liners, this new document embodies the objectives and technical approach of the recommendations of the BMP Advisory Committee for CAFOs as expressed in the 1988 BMP Handbook and the 1991 rule. The final rule requires use of the up-to-date NRCS guidelines for any new impoundment and to upgrade existing impoundments if they have a poorly performing liner or are located in a nitrogen management area. Although the recommendations were developed in 1988, the final rule is consistent with those recommendations.

The Department also added provisions in subsection R18-9-403(A)(4) so that it would be clear how to close the facility “in a manner that will minimize the discharge of any nitrogen pollutant.” These details are similar to other closure requirements in the rule for comparable general permit facilities.

2) Based on oral comments received from the stakeholders, the Department added some flexibility to the time-frame for submittal of a report of plan for upgrade. Subsection R18-9-403(B)(2)(c) has been amended as follows:

- c. The owner or operator shall, within 90 days of the Director’s notice, submit either:
 - i. A report to the Department demonstrating consistency with NRCS guidelines and the acceptable liner

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- performance criteria established in subsection (B)(1)(b); or*
- ii. *Plans and a schedule to upgrade the liner for the impoundment to meet the NRCS guidelines and the acceptable liner performance criteria in subsection (B)(1)(b). The Director may provide additional time for the submittal of the plans and a schedule for upgrade, if the owner or operator demonstrates that technical or financial assistance to develop the plans is needed.*

12. Any other matters prescribed by statute that are applicable to the specific agency or to any specific rule or class of rules:

Not applicable

13. Incorporations by reference and their location in the rules:

R18-9-A310(C)(1)(a)	Standard Practice for Surface Site Characterization for On-site Septic Systems, D5879-95 (2003)
R18-9-A310(D)(1)(a)(i)	Standard Practice for Subsurface Site Characterization of Test Pits for On-Site Septic Systems, D5921-96e1 (2003)
R18-9-A310(D)(1)(a)(ii)	Standard Practice for Soil Investigation and Sampling by Auger Borings, D1452-80 (2000)
R18-9-A314(B)(1)(b)	Building Code Requirements for Structural Concrete and Commentary, ACI 318-02/318R-02 (2002)
R18-9-A314(B)(1)(b)	Code Requirements for Environmental Engineering Concrete Structures and Commentary, ACI 350/350R-01 (2001)
R18-9-A314(B)(3)	Standard Specification for Precast Concrete Septic Tanks, C1227-03 (2003)
R18-9-A314(B)(4)	Material and Property Standards for Prefabricated Septic Tanks, IAPMO PS 1-2004 (2004)
R18-9-D301(C)(4)(b)(ii)	Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effect (12,400 ft-lbf/ft ³), D698-00ae1 (2000)
R18-9-E301(D)(1)(b)	Uniform Standard Specifications for Public Works Construction revisions through 2004 published by Maricopa Association of Governments
R18-9-E301(D)(1)(b)	Uniform Standard Details for Public Works Construction revisions through 2004 published by Maricopa Association of Governments
R18-9-E301(D)(1)(b)	Standard Specifications for Public Improvements, 2003 Edition, published jointly by Pima County Wastewater Management and the City of Tucson
R18-9-E301(D)(1)(b)	Standard Details for Public Improvements, 2003 Edition, published jointly by Pima County Wastewater Management and the City of Tucson
R18-9-E301(D)(2)(h)	Trench Excavation, Backfilling, and Compaction (Section 601), revised 2004
R18-9-E301(D)(2)(h))	Rigid Pipe Bedding for Sanitary Sewers (WWM 104), revised July 2002
R18-9-E301(D)(2)(h)	Flexible Pipe Bedding for Sanitary Sewers (WWM 105), revised July 2002
R18-9-E301(D)(2)(j)(i)	Standard Test Method for Installation of Acceptance of Plastic Gravity Sewer Lines Using Low-Pressure Air, F1417-92 (1998)
R18-9-E301(D)(2)(j)(ii)	Standard Practice for Testing Concrete Pipe Sewer Lines by Low-Pressure Air Test Method, C924-02 (2002)
R18-9-E301(D)(2)(j)(iii)	Standard Test Method for Low-Pressure Air Test of Vitrified Clay Pipe Lines, C828-03 (2003)
R18-9-E301(D)(2)(j)(iv)	Standard Test Method for Hydrostatic Infiltration Testing of Vitrified Clay Pipe Lines, C1091-03a (2003)
R18-9-E301(D)(2)(j)(v)	Standard Practice for Infiltration and Exfiltration Acceptance Testing of Installed Precast Concrete Pipe Sewer Lines, C969-02 (2002)
R18-9-E301(D)(2)(j)(vi)	Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications, D2321-00 (2000)

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R18-9-E301(D)(3)(c)	Pre-cast Concrete Sewer Manhole, #420-1, revised January 2004 and #420.2, revised January 2001
R18-9-E301(D)(3)(c)	Offset Manhole for 8 – 30 Pipe, #421, (1998)
R18-9-E301(D)(3)(c)	Sewer Manhole and Cover Frame Adjustment, #422, revised January 2001
R18-9-E301(D)(3)(c)	Manholes and Appurtenant Items (WWM 201 through WWM 211, except WWM 204, 205, and 206), revised July 2002
R18-9-E301(D)(3)(e)(ii)	Standard Test Method for Concrete Sewer Manholes by Negative Air Pressure (Vacuum) Test, C1244-02e1 (2002)
R18-9-E301(D)(3)(e)(iii)	High-Voltage Electrical Inspection of Pipeline Coatings, RP0274-2004 (2004)
R18-9-E304(D)(2)(e)	National Electrical Code, 2005 Edition
R18-9-E304(D)(3)(a)(i)	Standard Specification for Precast Concrete Water and Wastewater Structures, C913-02 (2002)
R18-9-E306(E)(1)	Standard Test Method for Capillary-Moisture Relationships for Coarse- and Medium-Textured Soils by Porous-Plate Apparatus, D2325-68 (2000),
R18-9-E307(E)(1)	Standard Test Method for Capillary-Moisture Relationships for Coarse- and Medium-Textured by Porous-Plate Apparatus, D2325-68 (2003)
R18-9-E308(C)(3)	Wisconsin Mound Soil Absorption System: Siting, Design, and Construction Manual, January 1990 Edition
R18-9-E308(D)(2)	Standard Specification for Concrete Aggregates, C33-03 (2003)
R18-9-E309(D)(2)	Standard Specification for Concrete Aggregates, C33-03 (2003)
R18-9-E310(D)(4)	Standard Specification for Concrete Aggregates, C33-03 (2003)
R18-9-E319(D)(1)(a)	Standard Specification for Concrete Aggregates, C33-03 (2003)
R18-9-E319(D)(1)(b)	Standard Test Method for Materials Finer than 75-µm (No. 200) Sieve in Mineral Aggregates by Washing, C117-04 (2004)
R18-9-E322(D)(5)	Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedule 40, 80, and 120, D1785-04a (2004)
R18-9-E322(D)(5)	Standard Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe, Schedule 40 and 80, F441/F441M-02 (2002)
R18-9-401(A)(7)	United States Department of Agriculture, Natural Resources Conservation Service, National Engineering Handbook, Part 651 Agricultural Waste Management Field Handbook, Chapter 10, 651.1080 Appendix 10D – Geotechnical, Design, and Construction (November 1997)

14. Was this rule previously made as an emergency rule?

No.

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15. The full text of the rules follows:

TITLE 18. ENVIRONMENTAL QUALITY

**CHAPTER 9. DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER POLLUTION CONTROL**

ARTICLE 1. AQUIFER PROTECTION PERMITS – GENERAL PROVISIONS

Section

- R18-9-101. Definitions
- R18-9-103. Class Exemptions
- R18-9-104. Transition from Notices of Disposal and Groundwater Quality Protection Permitted Facilities
- R18-9-105. Permit Continuance and Transition of Permits
- R18-9-106. Determination of Applicability
- R18-9-107. Consolidation of Aquifer Protection Permits
- R18-9-108. Public Notice
- R18-9-109. Public Participation
- R18-9-110. Inspections, Violations, and Enforcement

ARTICLE 2. AQUIFER PROTECTION PERMITS – INDIVIDUAL PERMITS

PART A. APPLICATION AND GENERAL PROVISIONS

Section

- R18-9-A201. Individual Permit Application
- R18-9-A202. Technical Requirements
- R18-9-A203. Financial Requirements
- R18-9-A204. Contingency Plan
- R18-9-A205. Alert Levels, ~~and~~ Discharge Limitations, and AQLs
- R18-9-A206. Monitoring Requirements
- R18-9-A207. Reporting Requirements
- R18-9-A208. Compliance Schedule
- R18-9-A209. Temporary Cessation, Closure, and Post-closure
- R18-9-A210. Temporary Individual Permit
- R18-9-A211. Permit Amendments
- R18-9-A212. Permit Transfer
- R18-9-A213. Permit Suspension, Revocation, ~~or~~ Denial, or Termination
- R18-9-A214. Requested Coverage Under a General Permit

PART B. BADCT FOR SEWAGE TREATMENT FACILITIES

Section

- R18-9-B201. General Considerations and Prohibitions
- R18-9-B202. ~~Application Requirements~~ Design Report
- R18-9-B203. ~~Application Review and Approval~~ Engineering Plans and Specifications
- R18-9-B204. Treatment Performance Requirements ~~For New Facilities~~ for a New Facility
- R18-9-B205. Treatment Performance Requirements for an Existing Facility
- R18-9-B206. Treatment Performance Requirements for Expansion of a ~~Permitted~~ Facility

ARTICLE 3. AQUIFER PROTECTION PERMITS – GENERAL PERMITS

PART A. GENERAL PROVISIONS

Section

- R18-9-A301. Discharging Under a General Permit
- R18-9-A303. ~~Permit~~ Renewal of a Discharge Authorization
- R18-9-A304. Notice of Transfer

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- R18-9-A305. Facility Expansion
R18-9-A306. Closure
R18-9-A307. Permit Revocation of Coverage Under a General Permit
R18-9-A309. General Provisions For Type 4 General Permits Concerning for On-site Wastewater Treatment Systems Facilities
R18-9-A310. Site Investigation For for Type 4 On-site Wastewater Treatment Facilities
R18-9-A311. Facility Selection For for Type 4 On-site Wastewater Treatment Facilities
R18-9-A312. Facility Design For for Type 4 On-site Wastewater Treatment Facilities
R18-9-A313. Facility Installation, and Operation, and Maintenance Plan For for On-site Wastewater Treatment Facilities
R18-9-A314. Septic Tank Design, Manufacturing, and Installation For for On-site Wastewater Treatment Facilities
R18-9-A315. Interceptor Design, Manufacturing, and Installation For for On-site Wastewater Treatment Facilities
R18-9-A316. Transfer of Ownership Inspection For for On-site Wastewater Treatment Facilities
R18-9-A317. Nitrogen Management Area

PART B. TYPE 1 GENERAL PERMITS

- R18-9-B301. Type 1 General Permit

PART C. TYPE 2 GENERAL PERMITS

- R18-9-C301. 2.01 General Permit: Drywells That Drain Areas Where Hazardous Substances Are Used, Stored, Loaded, or Treated
R18-9-C302. 2.02 General Permit: Intermediate Stockpiles at Mining Sites
R18-9-C303. 2.03 General Permit: Hydrologic Tracer Studies
R18-9-C304. 2.04 General Permit: Drywells that Drain Areas at Motor Fuel Dispensing Facilities Where Motor Fuels Are Used, Stored, or Loaded
R18-9-C305. 2.05 General Permit: Capacity, Management, Operation, and Maintenance of a Sewage Collection System
R18-9-C306. 2.06 General Permit: Fish Hatchery Discharge to a Perennial Surface Water

PART D. TYPE 3 GENERAL PERMITS

- R18-9-D301. 3.01 General Permit: Lined Impoundments
R18-9-D302. 3.02 General Permit: Process Water Discharges from Water Treatment Facilities
R18-9-D303. 3.03 General Permit: Vehicle and Equipment Washes
R18-9-D304. 3.04 General Permit: ~~Non-storm Water~~ Stormwater Impoundments at Mining Sites
R18-9-D305. 3.05 General Permit: Disposal Wetlands
R18-9-D306. 3.06 General Permit: Constructed Wetlands to Treat Acid Rock Drainage at Mining Sites
R18-9-D307. 3.07 General Permit: Tertiary Treatment Wetlands

PART E. TYPE 4 GENERAL PERMITS

- R18-9-E301. 4.01 General Permit: Sewage Collection Systems
R18-9-E302. 4.02 General Permit: Septic Tank ~~With with~~ Disposal by Trench, Bed, Chamber Technology, or Seepage Pit, Less Than 3000 Gallons Per Day Design Flow
R18-9-E303. 4.03 General Permit: Composting Toilet, Less Than 3000 Gallons Per Day Design Flow
R18-9-E304. 4.04 General Permit: Pressure Distribution System, Less Than 3000 Gallons Per Day Design Flow
R18-9-E305. 4.05 General Permit: Gravelless Trench, Less Than 3000 Gallons Per Day Design Flow
R18-9-E306. 4.06 General Permit: Natural Seal Evapotranspiration Bed, Less Than 3000 Gallons Per Day Design Flow
R18-9-E307. 4.07 General Permit: Lined Evapotranspiration Bed, Less Than 3000 Gallons Per Day Design Flow
R18-9-E308. 4.08 General Permit: Wisconsin Mound, Less Than 3000 Gallons Per Day Design Flow
R18-9-E309. 4.09 General Permit: Engineered Pad System, Less Than 3000 Gallons Per Day Design Flow
R18-9-E310. 4.10 General Permit: Intermittent Sand Filter, Less Than 3000 Gallons Per Day Design Flow
R18-9-E311. 4.11 General Permit: Peat Filter, Less Than 3000 Gallons Per Day Design Flow
R18-9-E312. 4.12 General Permit: Textile Filter, Less Than 3000 Gallons Per Day Design Flow
R18-9-E313. 4.13 General Permit: ~~RUCK®~~ Denitrifying System Using Separated Wastewater Streams, Less Than 3000 Gallons Per Day Design Flow
R18-9-E314. 4.14 General Permit: Sewage Vault, Less Than 3000 Gallons Per Day Design Flow
R18-9-E315. 4.15 General Permit: Aerobic System ~~with Subsurface Disposal~~, Less Than 3000 Gallons Per Day Design Flow
R18-9-E316. ~~4.16 General Permit: Aerobic System with Surface Disposal, Less Than 3000 Gallons Per Day Design Flow~~
4.16 General Permit: Nitrate-Reactive Media Filter, Less Than 3000 Gallons Per Day Design Flow
R18-9-E317. 4.17 General Permit: Cap System, Less Than 3000 Gallons Per Day Design Flow
R18-9-E318. 4.18 General Permit: Constructed Wetland, Less Than 3000 Gallons Per Day Design Flow
R18-9-E319. 4.19 General Permit: Sand-Lined Trench, Less Than 3000 Gallons Per Day Design Flow

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R18-9-E320.	4.20 General Permit: Disinfection Devices, Less Than 3000 Gallons Per Day Design Flow
R18-9-E321.	4.21 General Permit: Sequencing Batch Reactor, Less Than 3000 Gallons Per Day Design Flow <u>4.21 General Permit: Surface Disposal, Less Than 3000 Gallons Per Day Design Flow</u>
R18-9-E322.	4.22 General Permit: Subsurface Drip Irrigation Disposal, Less Than 3000 Gallons Per Day Design Flow
R18-9-E323.	4.23 General Permit: 3000 to less than 24,000 Gallons Per Day Design Flow
Table 1.	Unit Daily Design Flows

ARTICLE 4. ~~AGRICULTURAL~~ NITROGEN MANAGEMENT GENERAL PERMITS

Section

R18-9-401.	Definitions
R18-9-402.	<u>Agricultural Nitrogen Management General Permits: Nitrogen Fertilizers</u>
R18-9-403.	<u>Agricultural Nitrogen Management General Permits: Concentrated Animal Feeding Operations</u>
R18-9-404.	<u>Revocation of Coverage under a Nitrogen Management General Permit</u>

ARTICLE 1. AQUIFER PROTECTION PERMITS – GENERAL PROVISIONS

R18-9-101. Definitions

In addition to the definitions established in A.R.S. § 49-201, the following terms apply to Articles 1, 2, ~~and 3,~~ and 4 of this Chapter:

1. “Aggregate” means a clean graded hard rock, volcanic rock, or gravel of uniform size, between 3/4 inch to and 2 1/2 inches in diameter, offering 30% percent or more void space, washed or prepared to be free of fine materials that will impair absorption surface performance, and has a hardness value of three or greater on the Moh’s Scale of Hardness (can scratch a copper penny).
2. “Alert level” means a ~~numeric value; or criterion~~ expressing a concentration of a pollutant or a physical or chemical property of a pollutant, that is established in an individual permit and that serves as an early warning indicating a potential violation of an Aquifer Water Quality Standard at the applicable point of compliance or a permit condition related to BADCT or the discharge of a pollutant to groundwater.
3. “AQL” means an aquifer quality limit and is a permit limitation set for aquifer water quality measured at the point of compliance that either represents an Aquifer Water Quality Standard or, if an Aquifer Water Quality Standard for a pollutant is exceeded in an aquifer at the time of permit issuance, represents the ambient water quality for that pollutant.
- ~~3-4.~~ “Aquifer Protection Permit” means an individual permit or a general permit issued under A.R.S. §§ 49-203, 49-241 through 49-252, and Articles 1, 2, and 3 of this Chapter.
- ~~4-5.~~ “Aquifer Water Quality Standard” means a standard established under A.R.S. §§ 49-221 and 49-223.
6. “AZPDES” means the Arizona Pollutant Discharge Elimination System, which is the state program for issuing, modifying, revoking, reissuing, terminating, monitoring, and enforcing permits, and imposing and enforcing pretreatment and biosolids requirements under A.R.S. Title 49, Chapter 2, Article 3.1 and 18 A.A.C. 9, Articles 9 and 10.
- ~~5-7.~~ “BADCT” means the best available demonstrated control technology, process, operating method, or other alternative to achieve the greatest degree of discharge reduction determined for a facility by the Director under A.R.S. § 49-243.
- ~~6-~~ “Daily flow rate” means the average daily flow calculated for the month that has the highest total flow during a calendar year.
8. “Bedroom” means, for the purpose of determining design flow for an on-site wastewater treatment facility for a dwelling, any room that has:
 - a. A floor space of at least 70 square feet in area, excluding closets;
 - b. A ceiling height of at least 7 feet;
 - c. Electrical service and ventilation;
 - d. A closet or an area where a closet could be constructed;
 - e. At least one window capable of being opened and used for emergency egress; and
 - f. A method of entry and exit to the room that allows the room to be considered distinct from other rooms in the dwelling and to afford a level of privacy customarily expected for such a room.
9. “Book net worth” means the net difference between total assets and total liabilities.
10. “Chamber technology” means a method for dispersing treated wastewater into soil from an on-site wastewater treatment facility by one or more manufactured leaching chambers with an open bottom and louvered, load-bearing side-walls that substitute for an aggregate-filled trench described in R18-9-E302.
11. “CMOM Plan” means a Capacity, Management, Operations, and Maintenance Plan, which is a written plan that describes the activities a permittee will engage in and actions a permittee will take to ensure that the capacity of the sewage collection system, when unobstructed, is sufficient to convey the peak wet weather flow through each reach

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- of sewer, and provides for the management, operation, and maintenance of the permittee's sewage collection system.
- ~~7-12.~~ "Design capacity" means the volume of a containment feature at a discharging facility that accommodates all permitted flows and meets all Aquifer Protection Permit conditions, including allowances for appropriate peaking and safety factors to ensure sustained, reliable operation.
- ~~8-13.~~ "Design flow" means the daily flow rate a facility is designed to accommodate on a sustained basis while satisfying all ~~permit~~ Aquifer Protection Permit discharge limitations and treatment and operational requirements. The design flow ~~incorporates~~ either incorporates or is used with appropriate peaking and safety factors to ensure sustained, reliable operation.
- ~~9-14.~~ "Direct reuse site" means an area where reclaimed water is applied or impounded.
- ~~10-15.~~ "Disposal works" means the system for disposing ~~of~~ treated wastewater generated by the treatment works of a sewage treatment facility or on-site wastewater treatment facility, by surface or subsurface methods. Disposal works do not include systems for activities regulated under 18 A.A.C. 9, Article 7.
- ~~11-16.~~ "Drywell" means a well which is a bored, drilled or driven shaft or hole whose depth is greater than its width and is designed and constructed specifically for the disposal of storm water. Drywells do not include class 1, class 2, class 3 or class 4 injection wells as defined by the Federal Underground Injection Control Program (P.L. 93-523, part C), as amended. A.R.S. § 49-331(3)
- ~~17.~~ "Dwelling" means any building, structure, or improvement intended for residential use or related activity, including a house, an apartment unit, a condominium unit, a townhouse, or a mobile or manufactured home that has been constructed or will be constructed on real property.
- ~~12-18.~~ "Final permit determination" means a written notification to the applicant of the Director's final decision whether to issue or deny an Individual Aquifer Protection Permit.
- ~~13-19.~~ "Groundwater Quality Protection Permit" means a permit issued by the Arizona Department of Health Services or the Department- before September 27, 1989 that regulates the discharge of pollutants that may affect groundwater.
- ~~20.~~ "Homeowner's association" means a nonprofit corporation or unincorporated association of owners created pursuant to a declaration to own and operate portions of a planned community and which has the power under the declaration to assess association members to pay the costs and expenses incurred in the performance of the association's obligations under the declaration.
- ~~14-21.~~ "Injection well" means a well that receives a discharge through pressure injection or gravity flow.
- ~~15-22.~~ "Intermediate stockpile" means ~~an accumulation of~~ in-process material not intended for long-term storage ~~and that~~ is in transit from one process to another at ~~the~~ a mining site. Intermediate stockpile does not include metallic ore concentrate stockpiles or feedstocks not originating at the mining site.
- ~~23.~~ "Land treatment facility" means an operation designed to treat and improve the quality of waste, wastewater, or both, by placement wholly or in part on the land surface to perform part or all of the treatment. A land treatment facility includes a facility that performs biosolids drying, processing, or composting, but not land application performed in compliance with 18 A.A.C. 9, Article 10.
- ~~16-24.~~ "Mining site" means a site assigned one or more of the following primary Standard Industrial Classification Codes: 10, 12, 14, 32, and 33, and includes noncontiguous properties owned or operated by the same person and connected by a right-of-way controlled by that person to which the public is not allowed access.
- ~~25.~~ "Nitrogen Management Area" means an area designated by the Director for which the Director prescribes measures on an area-wide basis to control sources of nitrogen, including cumulative discharges from on-site wastewater treatment facilities, that threaten to cause or have caused an exceedance of the Aquifer Water Quality Standard for nitrate.
- ~~17-26.~~ "Notice of Disposal" means a document submitted to the Arizona Department of Health Services or the Department before September 27, 1989, giving notification of ~~the a pollutant~~ discharge of pollutants that may affect groundwater.
- ~~18-27.~~ "On-site wastewater treatment facility" means a conventional septic tank system or alternative system installed at a site to treat and dispose of wastewater, predominantly of human origin, generated at that site. An on-site wastewater treatment facility does not include a pre-fabricated, manufactured treatment works that typically uses an activated sludge unit process and has a design flow of 3000 gallons per day or more.
- ~~19-28.~~ "Operational life" means the designed or planned ~~useful~~ period during which a facility remains operational while ~~continuing to be being~~ subject to permit conditions, including closure requirements. Operational life does not include post-closure activities.
- ~~29.~~ "Person" means an individual, employee, officer, managing body, trust, firm, joint stock company, consortium, public or private corporation, including a government corporation, partnership, association or state, a political subdivision of this state, a commission, the United States government or any federal facility, interstate body or other entity. A.R.S. § 49-201(26). For the purposes of permitting a sewage treatment facility under Article 2 of this Chapter, person does not include a homeowner's association.
- ~~20-30.~~ "Pilot project" means a short-term, limited-scale test designed to gain information regarding site conditions, project feasibility, or application of a new technology.
- ~~21-31.~~ "Process solution" means a pregnant leach solution, barren solution, raffinate, ~~and or~~ other ~~solutions~~ solution uniquely associated with the mining or metals recovery process.

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- ~~22-32.~~ “Residential soil remediation level” means the applicable predetermined standard established in 18 A.A.C. 7, Article 2, Appendix A.
33. “Seasonal high water table” means the free surface representing the highest point of groundwater rise within an aquifer due to seasonal water table changes over the course of a year.
- ~~23-34.~~ “Setback” means a minimum horizontal distance maintained between a feature of a discharging facility and a potential point of impact.
- ~~24-35.~~ “Sewage” means untreated wastes from toilets, baths, sinks, lavatories, laundries, ~~and~~ other plumbing fixtures, and waste pumped from septic tanks in places of human habitation, employment, or recreation. Sewage does not include gray water as defined in R18-9-701(4), if the gray water is reused according to 18 A.A.C. 9, Article 7.
- ~~25-36.~~ “Sewage collection system” means a system of pipelines, conduits, manholes, pumping stations, force mains, and all other structures, devices, and appurtenances that collect, contain, and ~~conduct~~ convey sewage from its sources to the entry of a sewage treatment facility or on-site wastewater treatment facility serving sources other than a ~~single residence~~ single-family dwelling.
- ~~26-37.~~ “Sewage treatment facility” means a plant or system for sewage treatment and disposal, except for an on-site wastewater treatment facility, that consists of treatment works, disposal works, and appurtenant pipelines, conduits, pumping stations, and related subsystems and devices. A sewage treatment facility does not include components of the sewage collection system or the reclaimed water distribution system.
- ~~27-38.~~ “Surface impoundment” means a pit, pond, or lagoon with a surface dimension equal to or greater than its depth, and used for the storage, holding, settling, treatment, or discharge of liquid pollutants or pollutants containing free liquids.
- ~~28-39.~~ “Tracer” means a substance, such as a dye or other chemical, used to change the characteristic of water or some other fluid to detect movement.
- ~~29-40.~~ “Tracer study” means a test conducted using a tracer to measure the flow velocity, hydraulic conductivity, flow direction, hydrodynamic dispersion, partitioning coefficient, or other property of a hydrologic system.
41. “Treatment works” means a plant, device, unit process, or other works, regardless of ownership, used for treating, stabilizing, or holding municipal or domestic sewage in a sewage treatment facility or on-site wastewater treatment facility.
- ~~30-42.~~ “Typical sewage” means sewage conveyed to an on-site wastewater treatment facility in which the total suspended solids (TSS) content does not exceed 430 mg/l, the five-day biochemical oxygen demand (BOD₅) does not exceed 380 mg/l, the total nitrogen does not exceed 53 mg/l, and the content of ~~fats, oils, and greases (FOG)~~ oil and grease does not exceed 75 mg/l.
- ~~31-43.~~ “Underground storage facility” means a constructed underground storage facility or a managed underground storage facility. A.R.S. § 45-802.01(20) 45-802.01(21)
- ~~32-44.~~ “Waters of the United States” means:
- a. All waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide;
 - b. All interstate waters, including interstate wetlands;
 - c. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any waters:
 - i. That are or could be used by interstate or foreign travelers for recreational or other purposes;
 - ii. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
 - iii. That are used or could be used for industrial purposes by industries in interstate commerce;
 - d. All impoundments of waters defined as waters of the United States under this definition;
 - e. Tributaries of waters identified in subsections ~~(32)(a)~~ (a) through (d);
 - f. The territorial sea; and
 - g. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in subsections ~~(32)(a)~~ (a) through (f).

R18-9-103. Class Exemptions

Class exemptions. In addition to the classes or categories of facilities listed in A.R.S. § 49-250(B), the following classes or categories of facilities are exempt from the Aquifer Protection Permit requirements ~~of in~~ Articles 1, 2, and 3 of this Chapter:

1. Facilities that treat, store, or dispose of hazardous waste and have been issued a permit or have interim status, under the Resource Conservation and Recovery Act (P.L. 94-580; 90 Stat. 2796; 42 U.S.C. 6901 et. seq., as amended), or have been issued a permit according to the hazardous waste management rules adopted under ~~A.R.S. § 49-922~~ 18 A.A.C. 8, Article 2;
2. Underground storage tanks that contain a regulated substance as defined in A.R.S. § 49-1001;
3. Facilities for the disposal of solid waste, as defined in A.R.S. § 49-701.01, that are located in unincorporated areas and receive solid waste from four or fewer households; and
4. Land application of biosolids in compliance with 18 A.A.C. 9, ~~Article~~ Articles 9 and 10.

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R18-9-104. Transition from Notices of Disposal and Groundwater Quality Protection Permitted Facilities

- ~~A.~~ A person who filed a Notice of Disposal or received a Groundwater Quality Protection Permit shall notify the Department before any cessation. The Director shall specify any measure to be taken by the person to prevent a violation of an Aquifer Water Quality Standard at the point of compliance, determined by the criteria established in A.R.S. § 49-244.
- ~~B.~~ A person who owns, operates, or operated a facility, on or after January 1, 1986 for which a Notice of Disposal was filed or a Groundwater Quality Protection Permit was issued, ~~or who owns or operates a facility required to obtain an Aquifer Protection Permit~~ shall, within 90 days from the date on the Director's notification, submit an application for an Aquifer Protection Permit or a closure plan as specified under A.R.S. § 49-252. The person shall obtain a permit for continued operation, closure of the facility, or clean closure approval. Failure to submit an application or closure plan as required terminates continuance of the Notice of Disposal or Groundwater Quality Protection Permit.

R18-9-105. Permit Continuance and Transition of Permits

A. Continuance.

1. Groundwater Quality Protection Permits.
 - a. Subject to ~~the other provisions of R18-9-104 and other provisions of~~ this Section, a Groundwater Quality Protection Permit issued before September 27, 1989 is valid according to the terms of the permit until replaced by an Aquifer Protection Permit issued by the Department.
 - b. A person who owns or operates a facility to which a Groundwater Quality Protection Permit was issued is in compliance with Articles 1, 2, and 3 of this Chapter and A.R.S. Title 49, Chapter 2, Article 3, if the person facility:
 - i. Meets the conditions of the Groundwater Quality Protection Permit; and
 - ii. Is not causing or contributing to the violation of any Aquifer Water Quality Standard at a point of compliance, determined by the criteria in A.R.S. § 49-244.
2. Notice of Disposal. A person who owns or operates a facility for which a Notice of Disposal was filed before September 27, 1989 complies with Articles 1, 2, and 3 of this Chapter and A.R.S. Title 49, Chapter 2, Article 3 if the facility is not causing or contributing to the violation of an Aquifer Water Quality Standard at a point of compliance, determined by the criteria in A.R.S. § 49-244.
3. Aquifer Protection Permit application submittal. A person who did not file a Notice of Disposal and does not possess a Groundwater Quality Protection Permit or an Aquifer Protection Permit for an existing facility, but submitted the information required in applicable rules before December 27, 1989, is in compliance with Articles 1, 2, and 3 of this Chapter only if the person submitted an Aquifer Protection Permit application to the Department before January 1, 2001.

B. Applicability. Subsection (A) applies until the Director:

1. Issues an Aquifer Protection Permit for the facility,
2. Denies an Aquifer Protection Permit for the facility, ~~or~~
3. Issues a letter of clean closure approval for the facility under A.R.S. § 49-252, or
4. Determines that the person failed to submit an application under R18-9-104.

~~**C. Transition.**~~

- ~~1. From individual permit to a general permit.~~
 - ~~a. To qualify for a general permit established in Article 3, an owner or operator of a facility who applied for or was issued an individual permit before January 1, 2001, or who operates a facility described in subsection (A) shall submit the information required by Article 3 and adhere to all applicable general permit conditions.~~
 - ~~b. The facility's individual permit is valid and enforceable until the date the Department receives Notification of Intent to Discharge, or until the date the Director issues a written Verification of General Permit Conformance, if required.~~
 - ~~c. If the Director does not provide the required verification, the facility's individual permit remains valid and enforceable until its stated date of expiration, if any.~~
- ~~2. Approvals to Construct.~~
 - ~~a. Any Approval to Construct a sewerage system issued under 18 A.A.C. 9, Article 8 before January 1, 2001 is valid until its stated date of expiration.~~
 - ~~b. The Department shall accept the Approval to Construct instead of the design report requirements specified in R18-9-B202(A) if the individual permit application is in process on January 1, 2001.~~
 - ~~c. The Director shall provide a Verification of General Permit Conformance under R18-9-A301(D), for an on-site wastewater treatment facility with a flow of less than 20,000 gallons per day if the facility is constructed according to the specifications in the Approval to Construct.~~

- ~~**D. Monitoring.** The Director may amend an individual permit to incorporate monitoring requirements to ensure that reclaimed water quality standards developed under A.R.S. § 49-221(E) are met.~~

R18-9-106. Determination of Applicability

- A.** A person who engages or who intends to engage in an operation or an activity that may result in a discharge regulated

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under Articles 1, 2, and 3 of this Chapter may submit a request, on a form provided by the Department, that the Department determine the applicability of A.R.S. §§ 49-241 through 49-252 and Articles 1, 2, and 3 of this Chapter to the operation or activity.

- B. A person requesting a determination of applicability shall provide the following information and the applicable fee under 18 A.A.C. 14:
1. The name and location of the operation or activity;
 2. ~~The location of the operation or activity;~~
 - 3-2. The ~~names~~ name of the ~~persons~~ any person who ~~are~~ is engaging or who ~~propose~~ proposes to engage in the operation or activity;
 - 4-3. A description of the operation or activity;
 - 5-4. A description of the volume, chemical composition, and characteristics of materials stored, handled, used, or disposed of in the operation or activity; and
 - 6-5. Any other information required by the Director to make the determination of applicability.
- C. Within 45 days after receipt of a request for a determination of applicability, the Director shall notify in writing the person making the request that the operation or activity:
1. Is not subject to the requirements of A.R.S. §§ 49-241 through 49-252 and Articles 1, 2, and 3 of this Chapter because the operation or facility does not discharge as described under A.R.S. § 49-241;
 2. Is not subject to the requirements of A.R.S. §§ 49-241 through 49-252 and Articles 1, 2, and 3 of this Chapter because the operation or activity is exempted by A.R.S. § 49-250 or R18-9-103;
 3. Is eligible for a general permit under A.R.S. §§ 49-245.01, 49-245.02 or 49-247 or Article 3 of this Chapter, specifying the particular general permit that ~~applies, provided~~ would apply if the person meets the conditions of the ~~general~~ permit; or
 4. Is subject to the permit requirements of A.R.S. §§ 49-241 through 49-252 and Articles 1, 2, and 3 of this Chapter.
- D. If, after issuing a determination of applicability under this Section, the ~~Department~~ Director concludes that ~~its~~ the determination or the information relied upon for a determination is inaccurate, the ~~Department~~ Director may modify or withdraw its determination upon written notice to the person who requested the determination of applicability.
- E. If the Director determines that an operation or activity is subject to the requirements of A.R.S. §§ 49-241 through 49-252, the person who owns or operates the discharging facility shall, within 90 days from receiving the Director's written notification, submit an application for an Aquifer Protection Permit or a closure plan.

R18-9-107. Consolidation of Aquifer Protection Permits

- A. The Director may consolidate any number of individual permits or the coverage for any facility authorized to discharge under a general permits permit into a single individual permit, if:
1. The facilities are part of the same project or operation and are located in a contiguous geographic area, or
 2. The facilities are part of an area under the jurisdiction of a single political subdivision.
- B. All applicable individual permit requirements established in Articles 1 and 2 of this Chapter apply to the consolidation of Aquifer Protection Permits.

R18-9-108. Public Notice

- A. Individual permits.
1. The Department shall provide the entities specified in subsection (A)(2), with monthly written notification, by regular mail or electronically, of the following:
 - a. Individual permit applications,
 - b. Temporary permit applications,
 - c. Preliminary and final decisions by the Director whether to issue or deny an individual or temporary permit,
 - d. Closure plans received under R18-9-A209(B),
 - e. Significant permit amendments and "other" permit amendments,
 - f. Permit revocations, and
 - g. Clean closure approvals.
 2. Entities.
 - a. Each county department of health, environmental services department, or comparable department;
 - b. ~~An affected~~ A federal, state, local agency, or council of government, that may be affected by the permit action; and
 - c. A person who requested, in writing, notification of the activities described in subsection (A).
 3. The Department may post the information referenced in subsections (A)(1) and ~~(A)(2)~~ (2) on the Department web site: www.adeq.state.az.us www.azdeq.gov.
- B. General permits. Public notice requirements do not apply.

R18-9-109. Public Participation

- A. Notice of Preliminary Decision.
1. The Department shall publish a Notice of Preliminary Decision regarding the issuance or denial of a significant per-

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mit amendment or a final permit determination in one or more newspapers of general circulation where the facility is located.

2. The Department shall accept written comments from the public before a significant permit amendment or a final permit determination is made.
3. The written public comment period begins on the publication date of the Notice of Preliminary Decision and extends for 30 calendar days.

B. Public hearing.

1. The Department shall provide notice and conduct a public hearing to address a Notice of Preliminary Decision regarding a significant permit amendment or final permit determination if:
 - a. Significant public interest in a public hearing exists, or
 - b. Significant issues or information ~~have~~ has been brought to the attention of the Department that has not been considered previously in the permitting process.
2. If, after publication of the Notice of Preliminary Decision, the Department determines that a public hearing is necessary, the Department shall schedule a public hearing and publish the Notice of Preliminary Decision at least once, in one or more newspapers of general circulation where the facility is located.
3. The Department shall accept written public comment until the close of the hearing record as specified by the person presiding at the public hearing.

C. The Department shall respond in writing to all comments submitted during the formal public comment period.

~~C.D.~~ At the same time the Department notifies a permittee of a significant permit amendment or an applicant of the final permit determination, the Department shall send, through regular mail or electronically, a notice of the amendment or determination and the summary of response to comments to any person who submitted comments or attended a public hearing on the significant permit amendment or final permit determination.

~~D. The Department shall respond in writing to all written comments submitted during the written public comment period.~~

E. General permits. Public participation requirements do not apply.

R18-9-110. Inspections, Violations, and Enforcement

- A.** The Department shall conduct ~~any~~ an inspection of a permitted facility as specified under A.R.S. § 41-1009.
- B.** Except as provided in R18-9-A308, a person who owns or operates a facility contrary to a provision of Articles 1, 2, and 3 of this Chapter, violates a condition of an Aquifer Protection Permit, or violates a condition of a Groundwater Quality Protection Permit continued ~~by~~ under R18-9-105(A)(1) is subject to the enforcement actions established under A.R.S. Title 49, Chapter 2, Article 4.

ARTICLE 2. AQUIFER PROTECTION PERMITS – INDIVIDUAL PERMITS

PART A. APPLICATION AND GENERAL PROVISIONS

R18-9-A201. Individual Permit Application

A. Individual permit application.

~~1. A person may submit an~~ An individual permit application ~~that~~ covers one or more of the following categories:

- ~~1.a.~~ Drywell,
- ~~2.b.~~ Industrial,
- ~~3.c.~~ Mining,
- ~~4.d.~~ Wastewater, ~~or~~
- ~~5.e.~~ Solid waste disposal, ~~or~~
- ~~6.~~ Land treatment facility.

~~B.2. The~~ An applicant for an individual permit shall provide the Department with:

~~1.a.~~ The following information on an application form:

- ~~i.~~ The name and mailing address of the applicant;
- ~~ii.~~ The social security number of the applicant, if the applicant is an individual;
- ~~b.iii.~~ The name and mailing address of the owner of the facility;
- ~~c.iv.~~ The name and mailing address of the operator of the facility;
- ~~d.v.~~ The legal description, including latitude and longitude, of the location of the facility;
- ~~e.vi.~~ The expected operational life of the facility; and
- ~~f.vii. Any~~ The permit number for any other federal or state environmental permit issued to the applicant for that facility or site;

~~2.b.~~ A copy of the certificate of disclosure required by A.R.S. § 49-109;

~~3.c.~~ Evidence that the facility complies with applicable municipal or county zoning ordinances, codes, and regulations;

~~4.d.~~ Two copies of the technical information required in R18-9-A202(A);

~~5.e. The financial information required in R18-9-A203;~~ Cost estimates for facility construction, operation, maintenance,

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closure, and post-closure as follows.

- a. The applicant shall ensure that the cost estimates are derived by an engineer, controller, or accountant using competitive bids, construction plan take-off's, specifications, operating history for similar facilities, or other appropriate sources, as applicable.
- b. The following cost estimates that are representative of regional fair market costs:
 - i. The cost of closure estimate under R18-9-A209(B)(2), consistent with the closure plan or strategy submitted under R18-9-A202(A)(10);
 - ii. The estimated cost of post-closure monitoring and maintenance under R18-9-A209(C), consistent with the post-closure plan or strategy submitted under R18-9-A202(A)(10); and
 - iii. For a sewage treatment facility or utility subject to Title 40 of the Arizona Revised Statutes, the operation and maintenance costs of those elements of the facility used to make the demonstration under A.R.S. § 49-243(B);
- f. The site-specific conditions specified in R18-9-A202;

~~6.g.~~ For a sewage treatment facility, a design report signed and sealed by an Arizona-registered professional engineer, containing the:

- a. Documentation that the sewage treatment facility or expansion conforms with the Certified Areawide Water Quality Management Plan and the Facility Plan, and
- b. The additional information required in R18-9-B202 and R18-9-B203;

~~7.h.~~ Certification in writing that the information submitted in the application is true and accurate to the best of the applicant's knowledge; and

~~8.i.~~ The applicable fee established in 18 A.A.C. 14.

~~C.3.~~ Special provision for an underground storage facilities facility as defined in A.R.S. § 45-802.01(21). A person applying for an individual permit for an underground storage facility shall submit the information described in R18-9-A201 through R18-9-A203, except for the BADCT information specified in R18-9-A202(A)(5).

~~1.a.~~ Upon receipt of the application, the Department shall process the application in coordination with the underground storage facility permit process administered by the Department of Water Resources.

~~2.b.~~ The Department shall advise the Department of Water Resources of each permit application received.

~~B.D.~~ Pre-application conference. Upon request of the applicant, the Department shall schedule and hold a pre-application conference with the applicant to discuss any requirements in Articles 1 and 2 of this Chapter.

~~C.E.~~ Draft permit. The Department shall provide the applicant with a draft of the individual permit ~~on or immediately~~ before publication of the Notice of Preliminary Decision specified in R18-9-109.

~~D.F.~~ Permit ~~Duration~~ duration. Except for a temporary permit, an individual permit is valid for the operational life of the facility and any period during which the facility is subject to a post-closure plan under R18-9-A209(C).

~~E.G.~~ Permit issuance or denial.

1. The Director shall issue an individual permit ~~if the Director determines~~, based upon the information obtained by or made available to the Department, if the Director determines that the applicant will comply with A.R.S. §§ 49-241 through 49-252 and Articles 1 and 2 of this Chapter.
2. The Director shall provide the applicant with written notification of the final decision to issue or deny the permit ~~application~~ within the overall licensing time-frame requirements under 18 A.A.C. 1, ~~Chapter 5, Article 5, Table 10 and the following:~~
3. ~~If the Director denies an individual permit application the Director shall provide the applicant with a written notification that explains:~~
 - a. ~~The reason for the denial with reference to the statute or rule on which the denial is based;~~
 - ~~b.a.~~ The applicant's right to appeal the ~~denial~~ final permit determination, including the number of days the applicant has to file a protest ~~challenging the denial~~ and the name and telephone number of the Department contact person who can answer questions regarding the appeals process; and
 - b. If the permit is denied under R18-9-A213(B), the reason for the denial with reference to the statute or rule on which the denial is based; and
 - c. The applicant's right to request an informal settlement conference under A.R.S. §§ 41-1092.03(A) and 41-1092.06.
4. ~~Permit applications received before August 16, 1999, not subject to licensing time frames, shall be issued or denied within 30 days after close of public comment established in the public notice, or if a public hearing is held, within 45 days after the public hearing record is closed.~~
 - a. ~~The Director may extend the final decision deadline for not more than 90 days after the close of the public comment period, or, if a public hearing is held, after the public hearing record is closed, if the Director determines that additional information is required to make the decision whether to issue or deny a permit.~~
 - b. The Director shall provide the applicant with written notification of a decision to extend the final decision deadline within 15 days after the close of the public comment period or if a public hearing is held, within 15 days after the public hearing record is closed.

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R18-9-A202. Technical Requirements

- A. Except as specified in ~~R18-9-A201(A)(3)~~ R18-9-A201(C)(1), an applicant shall, as required under R18-9-A201(B)(4), submit the following technical information as attachments to the individual permit application:
1. A topographic map, or other appropriate map approved by the Department, of the facility location and contiguous land area showing the known use of adjacent properties, all known water well locations found within 1/2 mile of the facility, and a description of well construction details and well uses, if available;
 2. A facility site plan showing all known property lines, structures, water wells, injection wells, drywells and their uses, topography, and the location of points of discharge. The facility site plan shall include all known borings. ~~If unless the Department determines that borings are numerous, and the applicant shall satisfy this requirement may be satisfied by~~ with a narrative description of the number and location of the borings;
 3. The facility design documents indicating proposed or as-built design details and proposed or as-built configuration of basins, ponds, waste storage areas, drainage diversion features, or other engineered elements of the facility affecting discharge. When formal as-built plan submittals are not available, the applicant shall provide documentation; sufficient to allow evaluation of those elements of the facility affecting discharge, following the demonstration requirements of A.R.S. § 49-243(B). An applicant seeking an Aquifer Protection Permit for a sewage treatment facility ~~shall submit~~ satisfies the requirements of this subsection by submitting the design documents required in R18-9-B202 and R18-9-B203;
 4. A summary of the known past facility discharge activities and the proposed facility discharge activities indicating all of the following:
 - a. The chemical, biological, and physical characteristics of the discharge;
 - b. The rate, volume, and frequency of the discharge for each facility; and
 - c. The location of the discharge and a map outlining the pollutant management area described in A.R.S. § 49-244(1);
 5. A description of the BADCT ~~to be~~ employed in the facility, including:
 - a. A statement of the technology, processes, operating methods, or other alternatives ~~that will be employed proposed~~ to meet the requirements of A.R.S. § 49-243(B), (G), or (P), as applicable. The statement shall describe:
 - i. The alternative discharge control measures considered,
 - ii. The technical and economic advantages and disadvantages of each alternative, and
 - iii. The justification for selection or rejection of each alternative;
 - b. An evaluation of each alternative discharge control technology relative to the amount of discharge reduction achievable, site-specific hydrologic and geologic characteristics, other environmental impacts, and water conservation or augmentation;
 - c. For a new facility, an industry-wide evaluation of the economic impact of implementation of each alternative discharge control technology;
 - d. For an existing facility, a statement reflecting the consideration of factors listed in A.R.S. §§ 49-243(B)(1)(a) through ~~(B)(1)(h)~~ (h);
 - e. ~~The above requirements do not apply if the Department verifies that a~~ A sewage treatment facility meets meeting the BADCT requirements under Article 2, Part B of this Chapter satisfies the requirements under subsections (A)(5)(a) through (d).
 6. Proposed points of compliance for the facility based on A.R.S. § 49-244. An applicant shall demonstrate that:
 - a. The facility will not cause or contribute to a violation of ~~the an~~ an Aquifer Water Quality ~~Standards Standard~~ Standard at the proposed point of compliance; or
 - b. If an Aquifer Water Quality Standard for a pollutant ~~has been~~ is exceeded in an aquifer at the time of permit issuance, no additional degradation of the aquifer relative to that pollutant and determined at the proposed point of compliance will occur as a result of the discharge from the proposed facility. In this case, the applicant shall submit an Ambient Groundwater Monitoring Report that includes:
 - i. Data from eight or more rounds of ambient groundwater samples collected to represent groundwater quality at the proposed points of compliance, and
 - ii. An AQL proposal for each pollutant that exceeds an Aquifer Water Quality Standard;
 7. A contingency plan that meets the requirements of R18-9-A204;
 8. A hydrogeologic study that defines the discharge impact area for the expected duration of the facility. The Department may allow the applicant to submit an abbreviated hydrogeologic study or, if warranted, no hydrogeologic study, based upon the quantity and characteristics of the pollutants discharged, the methods of disposal, and the site conditions. ~~Information~~ The applicant may include information from a previous study of the affected area ~~may be included~~ to meet a requirement of the hydrogeologic study, if the previous study accurately represents current hydrogeologic conditions.
 - a. The hydrogeologic study shall demonstrate:
 - ~~a.i.~~ i. That the facility will not cause or contribute to a violation of an Aquifer Water Quality ~~Standards Standard~~ Standard at the applicable point of compliance; or

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- ~~b-ii.~~ If an Aquifer Water Quality Standard for a pollutant ~~has been~~ is exceeded in an aquifer at the time of permit issuance, that no additional degradation of the aquifer relative to that pollutant and determined at the applicable point of compliance will occur as a result of the discharge from the proposed facility;
- e-b. Based on the quantity and characteristics of pollutants discharged, methods of disposal, and site conditions, the Department may require the applicant to provide:
 - i. A description of the surface and subsurface geology, including a description of all borings;
 - ii. The location of any perennial, intermittent, or ephemeral surface water bodies;
 - iii. The characteristics of the aquifer and geologic units with limited permeability, including depth, hydraulic conductivity, and transmissivity;
 - iv. ~~Rate~~ The rate, volume, and direction of surface water and groundwater flow, including hydrographs, if available, and equipotential maps;
 - v. The precise location or estimate of the location of the 100-year flood plain and an assessment of the 100-year flood surface flow and potential impacts on the facility;
 - vi. Documentation of the existing quality of the water in the aquifers underlying the site, including, where available, the method of analysis, quality assurance, and quality control procedures associated with the documentation;
 - vii. Documentation of the extent and degree of any known soil contamination at the site;
 - viii. An assessment of the potential of the discharge to cause the leaching of pollutants from surface soils or vadose materials;
 - ix. For an underground water storage facility, an assessment of the potential of the discharge to cause the leaching of pollutants from surface soils or vadose materials or cause the migration of contaminated groundwater;
 - ~~ix-x.~~ Any anticipated changes in the water quality expected because of the discharge;
 - ~~x-xi.~~ A description of any expected changes in the elevation or flow directions of the groundwater ~~that may be expected to be caused by the facility;~~
 - ~~xi-xii.~~ A map of the facility's discharge impact area; or
 - ~~xii-xiii.~~ The criteria and methodologies used to determine the discharge impact area; ~~or~~
 - ~~xiii.~~ The proposed location of each point of compliance.
- 9. A detailed proposal indicating the alert levels, discharge limitations, monitoring requirements, compliance schedules, and temporary cessation, ~~closure, and post-closure strategies~~ or plans that the applicant will use to satisfy the requirements of A.R.S. Title 49, Chapter 2, Article 3, and Articles 1 and 2 of this Chapter;
- 10. Closure and post-closure strategies or plans; and
- ~~10-11.~~ Any other relevant information required by the Department to determine whether to issue a permit.
- B. An applicant shall demonstrate the ability to maintain the technical capability necessary to carry out the terms of the individual permit, including a demonstration that a certified operator will operate the facility ~~will be operated by a certified operator~~ if a certified operator is required under 18 A.A.C. 5. ~~An~~ The applicant shall make the demonstration by submitting the following information for each person principally responsible for designing, constructing, or operating the facility:
 - 1. Pertinent licenses or certifications held by the person;
 - 2. Professional training relevant to the design, construction, or operation of the facility; and
 - 3. Work experience relevant to the design, construction, or operation of the facility.

R18-9-A203.Financial Requirements

- A. ~~Cost estimates. A person applying for an individual permit shall demonstrate financial capability to construct, operate, close, and assure proper post-closure care of the facility in compliance with A.R.S. Title 49, Chapter 2, Article 3, Articles 1 and 2 of this Chapter, and the conditions of the individual permit.~~
 - ~~1. The applicant shall submit the following cost estimates:~~
 - ~~a. Total cost of new facility construction;~~
 - ~~b. The operation and maintenance costs of those elements of the facility used to comply with the demonstration under A.R.S. § 49-243(B);~~
 - ~~c. The cost of closure, described in R18-9-A209(B), consistent with the closure plan or strategy submitted under R18-9-A202(A)(9); and~~
 - ~~d. The cost of post-closure monitoring and maintenance, described in R18-9-A209(C), consistent with the post-closure plan or strategy submitted under R18-9-A202(A)(9).~~
 - ~~2. The cost estimates for facility construction, operation, and maintenance shall be derived from competitive bids, construction plan take-off's, or specifications, if available. The cost estimates may be prepared by an engineer, contractor, or accountant and shall be representative of regional fair market costs.~~
- B. ~~Financial demonstration. The applicant's chief financial officer shall submit a statement indicating that the applicant is financially capable of meeting the costs described in subsection (A).~~
 - ~~1. The statement shall specify in detail the financial arrangements for meeting the estimated closure and post-closure costs, according to the plans or strategies submitted under R18-9-A202(A)(9).~~

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2. ~~An applicant other than a state or federal agency, county, city, town, or other local government entity, shall further support the demonstration of financial capability with at least one of the following:~~
 - a. ~~If a publicly traded corporation, the latest fiscal year end copy of the applicant's 10K or 20F Form filed under section 13 or 15(d) of the federal Securities Exchange Act of 1934;~~
 - b. ~~If a non-publicly traded corporation, a report that contains all of the following:~~
 - i. ~~A brief description of the applicant's status as a corporation;~~
 - ii. ~~A brief description of the applicant's business;~~
 - iii. ~~Signed and dated copies of the applicant's U.S. tax returns with all schedules from the two previous tax years and a copy of the most recent year end financial statement.~~
 - iv. ~~A brief description of any civil judgement exceeding \$100,000 against the applicant during the last five years preceeding the date of the application;~~
 - v. ~~A brief description of any bankruptcy proceeding instituted by the applicant during the five years preceeding the date of the application; and~~
 - vi. ~~The names of the corporation's executive officers and their dates of birth or ages.~~
 - c. ~~If the applicant is a partnership or limited liability entity, the name of any principal who owns more than a 20% interest in the business entity;~~
 - d. ~~If the person is an individual, non-business applicant, a current financial statement and evidence of current personal income or assets.~~
- ~~C.~~ **The Department shall consider an applicant unable to demonstrate the financial capability necessary to fully carry out the terms of the permit, as described in subsection (B), and shall require the applicant to submit a financial assurance mechanism under subsection (D) if any one of the following conditions exists:**
 1. ~~For a publicly traded corporation:~~
 - a. ~~The 10K Form or 20F Form indicates that the company received an adverse opinion, disclaimer of opinion, or other qualified opinion from the independent certified public accountant auditing its financial statements;~~
 - b. ~~Standard and Poor's or Moody's Investors Service has assigned the applicant an unsecured debt rating less than investment grade. Unacceptable ratings are Standard and Poor's: BB, B, CCC, C, D or Speculative; Moody's Investors Services: Ba, B, Caa, Ca C, or Speculative or lack of an unsecured credit rating by Standard and Poor's or Moody's Investors Service; or~~
 - c. ~~Lack of assets in the United States equal to at least 90% of the total closure and post-closure care cost estimates.~~
 2. ~~For a non-publicly traded corporation:~~
 - a. ~~Lack of a financial statement prepared by an independent certified public accountant, including all balance sheet notes and schedules;~~
 - b. ~~Lack of assets located in the United States equal to at least 90% of total assets or assets amounting to less than six times the costs of closure and post-closure care; or~~
 - c. ~~Lack of net working capital and tangible net worth of at least six times the costs of closure and post-closure care.~~
- ~~D.~~ **Financial demonstration option.**
 1. ~~Instead of the financial demonstration required in subsection (B), an applicant may submit evidence of one or more of the following financial assurance mechanisms, listed in A.R.S. § 49-761(J), sufficient to cover the costs described in subsection (A). The applicant shall provide written documentation demonstrating compliance with the listed requirements for each financial assurance mechanism:~~
 - a. ~~Performance surety bond:~~
 - i. ~~The surety is listed in Department of Treasury, Circular 570, as qualified in the State where the bond is signed; and~~
 - ii. ~~The surety's underwriting limit is at least as great as the amount of the surety bond.~~
 - b. ~~Certificate of deposit:~~
 - i. ~~The Certificate of deposit is issued by a financial institution that is insured by the Federal Deposit Insurance Corporation or Federal Savings and Loan Insurance corporation, and~~
 - ii. ~~The Certificate of deposit is assigned to the Director.~~
 - c. ~~Trust fund with pay-in period:~~
 - i. ~~The trustee is an entity who has the authority to act as a trustee, and~~
 - ii. ~~The trust operation is regulated and examined by a federal or state agency.~~
 - d. ~~Irrevocable letter of credit:~~
 - i. ~~The issuing financial institution has authority to issue letters of credit, and~~
 - ii. ~~The issuing financial institution is regulated and examined by a federal or state agency.~~
 - e. ~~Insurance policy:~~
 - i. ~~The insurer is licensed to transact the business of insurance or as an excess or surplus lines insurer in one or more states, and~~
 - ii. ~~The insurer is a non-captive insurer.~~
 - f. ~~Deposit with the state treasurer.~~

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- g. ~~Guarantee.~~
 - i. ~~A guarantor is the direct or higher-tier parent corporation of the owner or operator, a firm whose parent corporation is also the parent corporation of the owner or operator, or a firm with a substantial business relationship with the owner or operator; and~~
 - ii. ~~A guarantor meets the requirements of subsection (D) and complies with the terms of the guarantee.~~
- h. ~~One or more financial assurance mechanisms; or~~
- i. ~~An additional financial assurance mechanism approved by the Director.~~
- 2. ~~A permittee may substitute one financial assurance mechanism for another with prior Director approval.~~
- 3. ~~A permittee shall hold the financial assurance mechanism for the duration of the permit or until the permittee is able to demonstrate the financial capability under subsection (B) necessary to carry out the terms of the Aquifer Protection Permit.~~
- E.** ~~If, after issuing an individual permit, the Director determines that a permittee is not able to maintain the financial capability required in subsection (B), the permittee shall provide evidence of a financial assurance mechanism within 90 days from the date on the Department's notification.~~
- F.** ~~If the Director has reason to believe that a permittee will lose financial capability, the Director may request demonstration of financial capability no more than quarterly throughout the duration of an individual permit. The permittee shall provide the information within 90 days from the date on the request.~~
- G.** ~~If a person demonstrates that a financial capability requirement under this Article is duplicative of a financial capability demonstration already made to the state and the Department has access to that information, the person is not required to resubmit that information.~~
- A.** Definitions.
 - 1. "Book net worth" means the net difference between total assets and total liabilities.
 - 2. "Face amount" means the total amount the insurer is obligated to pay under the policy.
 - 3. "Net working capital" means current assets minus current liabilities.
 - 4. "Substantial business relationship" means a pattern of recent or ongoing business transactions to the extent that a guaranty contract issued incident to that relationship is valid and enforceable.
 - 5. "Tangible net worth" means an owner or operator's book net worth, plus subordinated debts, less goodwill, patent rights, royalties, and assets and receivables due from affiliates or shareholders.
- B.** Financial demonstration. A person applying for an individual permit shall demonstrate financial capability to construct, operate, close, and ensure proper post-closure care of the facility in compliance with A.R.S. Title 49, Chapter 2, Article 3; Articles 1 and 2 of this Chapter; and the conditions of the individual permit. The applicant shall:
 - 1. Submit a letter signed by the chief financial officer stating that the applicant is financially capable of meeting the costs described in R18-9-A201(B)(5);
 - 2. For a state or federal agency, county, city, town, or other local governmental entity, submit a statement specifying the details of the financial arrangements used to meet the estimated closure and post-closure costs submitted under R18-9-A201(B)(5), including any other details that demonstrate how the applicant is financially capable of meeting the costs described in R18-9-A201(B)(5);
 - 3. For other than a state or federal agency, county, city, town, or other local governmental entity, submit the information required for at least one of the financial assurance mechanisms listed in subsection (C) that covers the closure and post-closure costs submitted under R18-9-A201(B)(5), including:
 - a. The selected financial mechanism or mechanisms;
 - b. The amount covered by each financial mechanism;
 - c. The institution or company that is responsible for each financial mechanism used in the demonstration; and
 - d. Any other details that demonstrate how the applicant is financially capable of meeting the costs described in R18-9-A201(B)(5); and
 - 4. For a facility subject to R18-9-A201(B)(5)(b)(iii) and not owned by a state or federal agency, county, city, town, or other local governmental entity, submit evidence of financial arrangements to cover the operation and maintenance costs described in R18-9-A201(B)(5).
- C.** Financial assurance mechanisms. The applicant may use any of the following mechanisms to cover the financial assurance obligation under R18-9-A201(B)(5):
 - 1. Financial test for self-assurance. If an applicant uses a financial test for self-assurance, the applicant shall not consolidate the financial statement with a parent or sibling company. The applicant shall make the demonstration in either subsection (C)(1)(a) or (b) and submit the information required in subsection (C)(1)(c):
 - a. The applicant may demonstrate:
 - i. One of the following:
 - (1) A ratio of total liabilities to net worth less than 2.0 and a ratio of current assets to current liabilities greater than 1.5;
 - (2) A ratio of total liabilities to net worth less than 2.0 and a ratio of the sum of net annual income plus depreciation, depletion, and amortization to total liabilities greater than 0.1; or

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- credit; and
- d. The letter is prepared by the financial institution and identifies the letter of credit issue date, expiration date, dollar sum of the credit, the name and address of the Department as the beneficiary, and the name and address of the applicant as the permittee.
6. Insurance policy. The applicant may use an insurance policy if the following conditions are met:
- a. The insurance is effective before signature of the permit or substitution of insurance for other extant financial assurance instruments posted with the Director;
- b. The insurer is authorized to transact the business of insurance in the state and has an AM BEST Rating of at least a B+ or the equivalent;
- c. The permittee submits a copy of the insurance policy to the Department;
- d. The insurance policy guarantees that funds are available to pay costs as submitted under R18-9-A201(B)(5) without a deductible. The policy also guarantees that once cleanup steps begin that the insurer will pay out funds to the Director or other entity designated by the Director up to an amount equal to the face amount of the policy;
- e. The policy guarantees that while closure and post-closure activities are conducted the insurer will pay out funds to the Director or other entity designated by the Director up to an amount equal to the face amount of the policy;
- f. The insurance policy is issued for a face amount at least equal to the current cost estimate submitted to the Director for performance of all items listed in R18-9-A201(B)(5) or a pro-rata amount if used with another financial assurance mechanism. Actual payments by the insurer will not change the face amount, although the insurer's future liability is reduced by the amount of the payments, during the policy period;
- g. The insurance policy names the Arizona Department of Environmental Quality as additional insured;
- h. The policy contains a provision allowing assignment of the policy to a successor permittee. The transfer of the policy is conditional upon consent of the insurer and the Department; and
- i. The insurance policy provides that the insurer does not cancel, terminate, or fail to renew the policy except for failure to pay the premium. The automatic renewal of the policy, at a minimum, provides the insured with a renewal option at the face amount of the expiring policy. If the permittee fails to pay the premium, the insurer may cancel the policy by sending notice of cancellation by certified mail to the permittee and to the Director 90 days in advance of the cancellation. If the insurer cancels the policy, the permittee shall provide alternate financial assurance within 60 days of receiving the notice of cancellation.
7. Cash deposit. The applicant may use a cash deposit if the cash is deposited with the Department to cover the financial assurance obligation under R18-9-A201(B)(5).
8. Guarantees.
- a. The applicant may use guarantees to cover the financial assurance obligation under R18-9-A201(B)(5) if the following conditions are met:
- i. The applicant submits to the Department an affidavit certifying that the guarantee arrangement is valid under all applicable federal and state laws. If the applicant is a corporation, the applicant shall include a certified copy of the corporate resolution authorizing the corporation to enter into an agreement to guarantee the permittee's financial assurance obligation;
- ii. The applicant submits to the Department documentation that explains the substantial business relationship between the guarantor and the permittee;
- iii. The applicant demonstrates that the guarantor meets conditions of the financial mechanism listed in subsection (C)(1). For purposes of applying the criteria in subsection (C)(1) to a guarantor, substitute "guarantor" for the term "applicant" as used in subsection (C)(1);
- iv. The guarantee is governed by and complies with state law;
- v. The guarantee continues in full force until released by the Director or replaced by another financial assurance mechanism listed under subsection (C);
- vi. The guarantee provides that, if the permittee fails to perform closure or post-closure care of a facility covered by the guarantee, the guarantor shall perform or pay a third party to perform closure or post-closure care, as required by the permit, or establish a fully funded trust fund as specified under subsection (C)(4) in the name of the owner or operator; and
- vii. The guarantor names the Arizona Department of Environmental Quality as beneficiary of the guarantee.
- b. Guarantee reporting. The guarantor shall notify or submit a report to the Department within 30 days of:
- i. An increase in financial responsibility during the fiscal year that affects the guarantor's ability to meet the financial demonstration;
- ii. Receiving an adverse auditor's notice, opinion, or qualification; or
- iii. Receiving a Department notification requesting an update of the guarantor's financial condition.
9. An applicant may use a financial assurance mechanism not listed in subsection (C)(1) through (8) if approved by the Director.
- D. Loss of coverage. If the Director believes that a permittee will lose financial capability under subsection (C), the permittee shall, within 30 days from the date of receipt of the Director's request, submit evidence that the financial demonstration**

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- under subsection (B) is being met or provide an alternative financial assurance mechanism.
- E.** Financial assurance mechanism substitution. A permittee may substitute one financial assurance mechanism for another if the substitution is approved by the Director through an amendment under subsection (F).
- F.** Permit amendment. The permittee shall apply for an amendment to the individual permit if the permittee changes a financial assurance mechanism or if the permittee's revision of the closure strategy results in an increase in the estimated cost under R18-9-A201(B)(5). If a permittee seeks to amend a permit under R18-9-A211(B), the permittee shall submit a financial capability demonstration for all facilities covered by the amended individual permit with the permit amendment request.
- G.** Previous financial demonstration. If an applicant shows that the financial assurance demonstration required under this Section is covered within a financial demonstration already made to a governmental agency and the Department has access to that information, the applicant is not required to resubmit the information. The applicant shall certify that the current financial condition is equal to or better than the condition reflected in the financial demonstration provided to the other governmental agency. This provision does not apply to a demonstration required under subsection (F).
- H.** Recordkeeping. A permittee shall maintain the financial capability for the duration of the permit and report as specified in the permit.

R18-9-A204. Contingency Plan

- A.** An individual permit shall specify a contingency plan that defines the actions to be taken if a discharge results in any of the following:
- ~~1. A violation of a permit condition,~~
 - ~~2.1. A violation of an Aquifer Water Quality Standard or an AQL,~~
 - ~~3. An alert level is exceeded,~~
 - ~~4.2. A violation of a discharge limitation is exceeded, or~~
 - ~~3. A violation of any other permit condition,~~
 - ~~4. An alert level is exceeded, or~~
 5. An imminent and substantial endangerment to the public health or the environment.
- B.** The contingency plan may include one or more of the following actions if a discharge results in any of the conditions described in subsection (A):
1. Verification sampling;
 2. Notification to downstream or downgradient users who may be directly affected by the discharge;
 3. Further monitoring that may include increased frequency, additional constituents, or additional monitoring locations;
 4. Inspection, testing, operation, or maintenance of discharge control features ~~of at~~ the facility;
 5. Evaluation of the effectiveness of discharge control technology at the facility that may include technology upgrades;
 - ~~5.6. For Evaluation of pretreatment for sewage treatment facilities, pretreatment evaluation;~~
 - ~~6.7. Preparation of a hydrogeologic study to assess the extent of soil, surface water, or aquifer impact;~~
 - ~~7.8. Corrective action that may include includes any of the following measures:~~
 - a. Control of the source of an unauthorized discharge,
 - b. Soil cleanup,
 - c. Cleanup of affected surface waters,
 - d. Cleanup of affected parts of the aquifer, or
 - e. Mitigation measures to limit the impact of pollutants on existing uses of the aquifer.
- C.** ~~Each A permittee shall not take a corrective action proposed under subsection (B)(7) (B)(8) is subject to approval unless the action is approved by the Department.~~
1. Emergency response provisions and corrective actions specifically identified in the contingency plan submitted with a permit application are subject to approval by the Department during the application review process.
 2. ~~Corrective actions The permittee may propose to the Department a corrective action other than those already identified in the contingency plan may be proposed to the Department by the permittee if a discharge results in any of the conditions identified in subsection (A).~~
 3. The Department shall approve ~~a the~~ proposed corrective action if the corrective action provides a plan and expedient time-frame to return return the facility to compliance with the facility's permit conditions, A.R.S. Title 49, Chapter 2, and Articles 1 and 2 of this Chapter.
 - ~~Approved The Director may incorporate corrective actions into an Aquifer Protection Permit other than those already identified in the contingency plan may be incorporated by the Director into an Aquifer Protection Permit.~~
- D.** A contingency plan shall contain emergency response provisions to address an imminent and substantial endangerment to public health or the environment including:
1. Twenty-four hour emergency response measures;
 2. The name of an emergency response coordinator responsible for implementing the contingency plan;
 3. Immediate notification ~~of to~~ the Department regarding any emergency response measure taken;
 4. A list of people to contact, including names, addresses, and telephone numbers ~~of persons to be contacted~~ if an imminent and substantial endangerment to public health or the environment arises; and

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5. A general description of the procedures, personnel, and equipment ~~that will be used~~ proposed to mitigate unauthorized discharges.
- E. A permittee may amend a contingency plan required by the Federal Water Pollution Control Act (P.L. 92-500; 86 Stat. 816; 33 U.S.C. 1251, et seq., as amended), or the Resource Conservation and Recovery Act of 1976 (P.L. 94-580; 90 Stat. 2796; 42 U.S.C. 6901 et seq., as amended), ~~may be amended~~ to meet the requirements of this Section and ~~submitted~~ submit it to the Department for approval instead of a separate aquifer protection contingency plan.
- F. A permittee shall maintain at least one copy of the contingency plan required by the individual permit at the location where day-to-day decisions regarding the operation of the facility are made. A permittee shall advise all employees responsible for the operation of the facility of the location of the contingency plan.
- G. A permittee shall promptly revise the contingency plan upon any change to the information contained in the plan.

R18-9-A205. Alert Levels, ~~and Discharge Limitations, and AOLs~~

- A. Alert levels.
 1. ~~The Department shall establish alert levels in an individual permit. The alert levels~~ If the Department prescribes an alert level in an individual permit, the Department shall be based base the alert level on the site-specific conditions described by the applicant in the application submitted under R18-9-A201(A)(2) or other information available to the Department.
 2. The Department may specify an alert level based on a pollutant that indicates the potential appearance of another pollutant.
 3. The Department may specify the measurement of an alert level at a location appropriate for the discharge activity, considering the physical, chemical, and biological characteristics of the discharge, the particular treatment process, and the site-specific conditions.
- B. ~~Discharge Limitations~~ limitations. ~~The Department shall prescribe discharge limitations based~~ If the Department prescribes discharge limitations in an individual permit, the Department shall base the discharge limitations on the considerations described in A.R.S. § 49-243.
- C. AOLs. The Department may prescribe an AOL in an individual permit to ensure that the facility continues to meet the criteria under A.R.S. § 49-243(B)(2) or (3).
 1. If the concentration of a pollutant in the aquifer does not exceed the Aquifer Water Quality Standard, the Department shall set the AOL at the Aquifer Water Quality Standard.
 2. If the concentration of a pollutant in the aquifer exceeds the Aquifer Water Quality Standard, the Department shall set the AOL higher than the Aquifer Water Quality Standard.

R18-9-A206. Monitoring Requirements

- A. Monitoring.
 1. The Department shall determine whether monitoring is required to assure compliance with Aquifer Protection Permit conditions and with the applicable Aquifer Water Quality Standards established under A.R.S. §§ 49-221, 49-223, 49-241 through 49-244, and 49-250 through 49-252.
 2. If monitoring is required, the Director shall specify to the permittee:
 - a. The type and method of monitoring ~~to be conducted~~;
 - b. The frequency of monitoring;
 - c. Any requirements for the installation, use, or maintenance of monitoring equipment; and
 - d. The intervals at which the permittee ~~shall report~~ reports the monitoring results to the Department.
- B. Recordkeeping.
 1. A permittee shall make a monitoring record for each sample taken, as required by the individual permit, consisting of all of the following:
 - a. The date, time, and exact place of a sampling and the name of each individual who performed the sampling;
 - b. The procedures used to collect the sample;
 - c. The date sample analysis was completed;
 - d. The name of each individual or laboratory performing the analysis;
 - e. The analytical techniques or methods used to perform the sampling and analysis;
 - f. The chain of custody records; and
 - g. Any field notes relating to the information described in subsections (B)(1)(a) through ~~(B)(1)(f)~~ (f).
 2. A permittee shall make a monitoring record for each measurement made, as required by the individual permit, consisting of all of the following:
 - a. The date, time, and exact place of the measurement and the name of each individual who performed the measurement;
 - b. The procedures used to make the measurement; and
 - c. Any field notes relating to the information described in subsections (B)(2)(a) and ~~(B)(2)(b)~~ (b).
 3. A permittee shall maintain monitoring records for at least 10 years after the date of the sample or measurement, unless the Department specifies a shorter time period in the permit.

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R18-9-A207. Reporting Requirements

- A. A permittee shall notify the Department within five days after becoming aware of a violation of a permit condition or that an alert level ~~has been~~ was exceeded. The permittee shall inform the Department whether the contingency plan described in R18-9-A204 ~~has been~~ was implemented.
- B. In addition to the requirements in subsection (A), a permittee shall submit a written report to the Department within 30 days after the permittee becomes aware of ~~the a~~ violation of a permit condition. The report shall contain:
1. A description of the violation and its cause;
 2. The period of violation, including exact date and time, if known, and the anticipated time period the violation is expected to continue;
 3. Any action taken or planned to mitigate the effects of the violation or to eliminate or prevent recurrence of the violation;
 4. Any monitoring activity or other information that indicates that a pollutant is expected to cause a violation of an Aquifer Water Quality Standard; and
 5. Any malfunction or failure of a pollution control device or other equipment or process.
- C. A permittee shall notify the Department within five days after the occurrence of any of the following:
1. The permittee's filing of bankruptcy, or
 2. The entry of any order or judgment not issued by the Director against the permittee for the enforcement of any federal or state environmental protection statute or rule.
- D. The Director shall specify the format for submitting results from monitoring conducted under R18-9-A206.

R18-9-A208. Compliance Schedule

- A. A permittee shall follow the compliance schedule established in the individual permit.
1. If a compliance schedule provides that ~~actions are to be taken during a period that exceeds~~ an action is required more than one year from after the date of permit issuance, the schedule shall establish interim requirements and dates for their achievement.
 2. If the time necessary for completion of an interim requirement is more than one year and is not readily divisible into stages for completion, the permit shall contain interim dates for submission of reports on progress toward completion of the interim requirements and shall indicate a projected completion date.
 3. ~~Within~~ Unless otherwise specified in the permit, within 30 days after the applicable date specified in a compliance schedule, a permittee shall submit to the Department a report ~~indicating whether~~ documenting that the required action was taken within the time specified.
 4. After reviewing the compliance schedule activity the Director may amend the Aquifer Protection Permit, based on changed circumstances relating to the required action.
- B. The Department shall consider all of the following factors when setting the compliance schedule requirements:
1. The character and impact of the discharge,
 2. The nature of construction or activity required by the permit,
 3. The number of persons affected or potentially affected by the discharge,
 4. The current state of treatment technology, and
 5. The age of the facility.
- C. For a new facility, the Department shall not defer to a compliance schedule any requirement necessary to satisfy the criteria under A.R.S. § 49-243(B).

R18-9-A209. Temporary Cessation, Closure, and Post-closure

- A. Temporary cessation.
1. A permittee shall notify the Department before a cessation of operations at the facility of at least 60 days duration.
 2. The permittee shall implement any ~~measures~~ condition specified in the individual permit for the temporary cessation.
 3. If the permit does not specify any temporary cessation ~~measures~~ condition, the Department shall require the permittee ~~to shall, prior to implementation, submit specifications for each measure~~ the proposed temporary cessation plan for Department approval ~~by the Department~~.
- B. Closure.
1. Before providing notice under subsection (B)(2), a person may request that the Director review a site investigation plan for a facility under subsection (B)(3)(a) or the results of a site investigation at a facility to determine compliance with this subsection and A.R.S. § 49-252.
 - 1-2. A ~~permittee~~ person shall notify the Department of the ~~permittee's~~ person's intent to cease operations without resuming an activity for which the facility was designed or operated.
 - 3-a. The ~~permittee~~ person shall submit a closure plan for Director approval within 90 days following the notification of intent to cease operations with the applicable fee established in 18 A.A.C. 14. ~~The~~ A complete closure plan shall ~~describe~~ include:
 - a. A site investigation plan that includes a summary of relevant site studies already conducted and a proposed scope of work for any additional site investigation necessary to identify:

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- i. The lateral and vertical extent of contamination in soils and groundwater, using applicable standards;
 - ii. The approximate quantity and chemical, biological, and physical characteristics of each waste, contaminated water, or contaminated soil proposed for removal from the facility;
 - iii. The approximate quantity and chemical, biological, and physical characteristics of each waste, contaminated water, or contaminated soil that will remain at the facility; and
 - iv. Information regarding site conditions related to pollutant fate and transport that may influence the scope of sampling necessary to characterize the site for closure;
 - b. A summary describing the results of a site investigation and any other information used to identify:
 - i. The lateral and vertical extent of soil and groundwater contamination, using applicable standards, and the analytical results that support the determination;
 - ~~i-ii.~~ The approximate quantity and chemical, biological, and physical characteristics of each material ~~to be removed from the facility~~ scheduled for removal;
 - ~~ii-iii.~~ The destination of the materials ~~to be removed from the facility~~ and documentation that the destination is approved to accept the materials;
 - ~~iii-iv.~~ The approximate quantity and chemical, biological, and physical characteristics of each material that remains at the facility; and
 - ~~iv.~~ The method ~~to be used to treat any material remaining at the facility;~~
 - ~~v.~~ The method ~~to be used to control the discharge of pollutants from the facility;~~
 - ~~vi.~~ Any limitations on future land or water uses created as a result of the facility's operations or closure activities;
 - ~~vii.~~ The methods ~~to be used to secure the facility;~~
 - ~~viii.~~ An estimate of the cost of closure;
 - ~~ix.~~ A schedule for implementation of the closure plan and the submission of a post-closure plan; and
 - ~~x-v.~~ Any other relevant information the Department determines ~~to be~~ is necessary;
 - c. A closure design that identifies:
 - i. The method used, if any, to treat any material remaining at the facility;
 - ii. The method used to control the discharge of pollutants from the facility;
 - iii. Any limitation on future land or water uses created as a result of the facility's operations or closure activities and a Declaration of Environmental Use Restriction according to A.R.S. § 49-152, if necessary; and
 - iv. The methods used to secure the facility;
 - d. An estimate of the cost of closure;
 - e. A schedule for implementation of the closure plan and submission of a post-closure plan if clean closure is not achieved; and
 - f. For an implemented closure plan, a summary report of the results of site investigation performed during closure activities, including confirmation and verification sampling.
- b. ~~Upon receipt of a complete closure plan, the Director shall:~~
- ~~i. Provide written notification of the closure as specified in R18-9-108 and~~
 - ~~ii. If the proposed closure plan does not achieve clean closure, publish a Notice of Preliminary Decision for a permit amendment or issuance of an individual permit as specified in R18-9-109.~~
- 2.4. Within 60 days of receipt of a complete closure plan, the Department shall determine whether the closure plan achieves clean closure.
- a. If the ~~implemented complete~~ closure plan achieves clean closure, the Director shall:
 - i. If the facility is not covered by an Aquifer Protection Permit, send the person a letter of approval ~~to the permittee; or~~
 - ii. If the facility is covered by an Aquifer Protection Permit, send the person a Permit Release Notice issued under subsection (C)(2)(c).
 - b. If the ~~implemented complete~~ closure plan ~~does~~ did not achieve clean closure, the ~~permittee person~~ shall submit a post-closure plan under subsection (C) and the following documents within 90 days from the date on the Department's notice or as specified under A.R.S. § 49-252(E):
 - i. An application for an individual permit, or
 - ii. A request to ~~modify~~ amend a current individual permit to address closure activities and post-closure monitoring and maintenance at the facility.
3. ~~The Director shall require implementation of the closure plan as a permit condition.~~
- C. Post-closure. A ~~permittee person~~ shall describe post-closure monitoring and maintenance activities in ~~a plan~~ an application for a permit or an amendment to an individual permit and submit it to the Department for approval.
- 1. The ~~plan~~ application shall include:
 - a. The duration of post-closure care;
 - b. The monitoring procedures ~~to be implemented~~ proposed by the permittee, including monitoring frequency, type, and location;

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- c. A description of the operating and maintenance procedures ~~to be implemented~~ proposed for maintaining aquifer quality protection devices, such as liners, treatment systems, pump-back systems, surface water and stormwater management systems, and monitoring wells;
 - d. A schedule and description of physical inspections ~~to be conducted~~ proposed at the facility following closure;
 - e. An estimate of the cost of post-closure maintenance and monitoring; ~~and~~
 - f. A description of limitations on future land or water uses, or both, at the facility site as a result of facility operations; ~~and~~
 - g. The applicable fee established in 18 A.A.C. 14.
2. The Director shall include the post-closure plan submitted under subsection (C)(1) in the individual permit or permit amendment.
- ~~D.~~ a. The permittee shall provide the Department ~~with~~ written notice that a closure plan or a post-closure plan ~~has been~~ was fully implemented within 30 calendar days of ~~completion~~ implementation of the plan. The notice shall include a summary report confirming the closure design and describing the results of sampling performed during closure activities and post-closure activities, if any, to demonstrate the level of cleanup achieved.
- b. The Director may, upon receipt of the notice, inspect the facility to ensure that the closure plan has been fully implemented.
- c. The Director shall issue a Permit Release Notice if the permittee satisfies all closure and post-closure requirements.

R18-9-A210. Temporary Individual Permit

- A. A person may apply for a temporary individual permit for either of the following:
- 1. A pilot project ~~necessary~~ to develop data for an Aquifer Protection Permit application for the full-scale project, or
 - 2. A ~~temporary~~ facility with a discharge lasting no more than six months.
- B. The applicant shall submit a preliminary application containing the information required in ~~R18-9-A201(A)(2)(a)~~ R18-9-A201(B)(1).
- C. The Department shall, based on the preliminary application and in consultation with the applicant, determine and provide the applicant notice of ~~what~~ any additional information in ~~R18-9-A201(A)(2)~~ R18-9-A201(B) that is necessary to complete the application.
- D. Public participation.
- 1. If the Director issues a temporary individual permit, the Director shall postpone the public participation requirements under R18-9-109.
 - 2. The Director shall not postpone notification of the opportunity for public participation for more than 30 days from the date on the temporary individual permit.
 - 3. The Director may ~~modify~~ amend or revoke the temporary individual permit after consideration of public comments.
 - 4. The Director shall not issue a public notice or hold a public hearing if a temporary individual permit is renewed without change.
 - 5. The Director shall follow the public participation requirements under R18-9-109 when making a significant amendment to a temporary individual permit.
- ~~E.~~ A temporary individual permit expires after one year unless it is renewed. ~~A permittee~~ The Director may renew a temporary individual permit no more than one time.

R18-9-A211. Permit Amendments

- A. The Director may amend an individual permit based upon a request or upon the Director's initiative.
- 1. A permittee shall submit a request for permit amendment in writing on a form provided by the Department with the applicable fee established in 18 A.A.C. 14, explaining the facts and reasons justifying the request.
 - 2. The Department shall process amendment requests following the licensing time-frames established under 18 A.A.C. 1, Article 5, Table 10.
 - 3. An amended permit supersedes the previous permit upon the effective date of the amendment.
- B. Significant permit amendment. The Director shall make a significant amendment to an individual permit if:
- 1. Part or all of an existing facility becomes a new facility under A.R.S. § 49-201;
 - 2. A physical change in a permitted facility or a change in its method of operation results in:
 - a. An increase of 10% percent or more in the permitted volume of pollutants discharged, except a sewage treatment facility;

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- b. An increase in design flow of a sewage treatment facility as follows:

Permitted Design Flow	% Increase in Design Flow
500,000 gallons per day or less	10%
Greater than 500,000 gallons per day but less than or equal to five million gallons per day	6%
Greater than five million gallons per day but less than or equal to 50 million gallons per day	4%
Greater than 50 million gallons per day	2%

- c. Discharge of an additional pollutant not allowed by a facility's original individual permit. The Director may consider the addition of a pollutant with a chemical composition substantially similar to a pollutant the permit currently allows by making an "other" amendment to the individual permit as prescribed in subsection (D);
- d. For any pollutant not addressed in a facility's individual permit, any increase that brings the level of the pollutant to within 80% percent or more of a numeric Aquifer Water Quality Standard at the point of compliance; or
- e. An increase in the concentration in the discharge of a pollutant listed under A.R.S. § 49-243(I);
3. Based upon available information, the facility can no longer demonstrate that its discharge will comply with A.R.S. § 49-243(B)(2) or (3);
4. The permittee requests and the Department ~~makes a~~ agrees to less stringent monitoring ~~change, not specified in the individual permit, that will reduce~~ reduces the frequency in monitoring or reporting or ~~that will reduce~~ reduces the number of pollutants monitored, and the permittee demonstrates that the changes ~~do will~~ not affect ~~it's~~ the permittee's ability to remain in compliance with Articles 1 and 2 of this Chapter;
5. It is necessary to change the designation of a point of compliance;
6. It is necessary to update BADCT for a facility that was issued an individual permit and was not constructed within five years of permit issuance;
- 6-7. The permittee requests and the Department ~~makes~~ agrees to less stringent discharge limitations when the permittee ~~and~~ demonstrates that the changes will not affect the permittee's ability to remain in compliance with Articles 1 and 2 of this Chapter;
- 7-8. It is necessary to make an addition to or a substantial change in closure requirements or to provide for post-closure maintenance and monitoring; or
- 8-9. Material and substantial alterations or additions to a permitted facility, including a change in disposal method, justify a change in permit conditions.
- C. Minor permit amendment. The Director shall make a minor amendment to an individual permit to:
1. Correct a typographical error;
 2. Change nontechnical administrative information, excluding a permit transfer;
 3. Correct minor technical errors, such as errors in calculation, locational information, citations of law, and citations of construction specifications;
 4. Increase the frequency of monitoring or reporting, or to revise a laboratory method;
 5. Make a discharge limitation more stringent; ~~or~~
 6. Make a change in a recordkeeping retention requirement; or
 - 6-7. Insert calculated alert levels, AQLs, or other permit limits into a permit based on monitoring subsequent to permit issuance, if a requirement to establish the levels or limits and the method for calculation of the levels or limits was established in the original permit.
- D. "Other" permit amendment.
1. The Director may make an "other" amendment to an individual permit if the amendment is not a significant or minor permit amendment prescribed in this Section, based on an evaluation of the information relevant to the amendment.
 2. Examples of an "other" amendment to an individual permit include:
 - a. A change in a construction requirement, treatment method, or operational practice, if the alteration complies with the requirements of Articles 1 and 2 of this Chapter and provides equal or better performance;
 - b. A change in an interim or final compliance date in a compliance schedule, if the Director determines just cause exists for changing the date;

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- c. A change in the permittee's financial assurance mechanism under ~~R18-9-A203(D)(2)~~ R18-9-A203(C);
 - d. ~~Permit~~ A permit transfer under R18-9-A212;
 - e. ~~Replacement~~ The replacement of monitoring equipment, including a well, if the replacement results in equal or greater monitoring effectiveness;
 - f. Any increase in the volume of pollutants discharged that is less than that described in subsection (B)(2)(a) or ~~(B)(2)(b)~~ (b);
 - g. An adjustment of the permit to conform to rule or statutory provisions;
 - h. A calculation of an alert level, AQL, or other permit limit based on monitoring subsequent to permit issuance;
 - i. An addition of a point of compliance monitor well;
 - ~~h-j.~~ A combination of two or more permits at the same site as specified under R18-9-107; ~~or~~
 - ~~i-k.~~ An adjustment or incorporation of monitoring requirements to ensure ~~reclaimed water quality standards~~ Reclaimed Water Quality Standards developed under ~~A.R.S. § 49-224(E)~~ 18 A.A.C. 11, Article 3 are met; or
 - l. A change in a contingency plan resulting in equal or more efficient responsiveness.
- E. The public notice and public participation requirements of R18-9-108 and R18-9-109 apply to a significant amendment. The public notice requirements apply to an "other" amendment. A minor amendment does not require a public notice or public participation.
- F. The Director shall not amend or reissue a permit to allow use of a discharge control technology that provides a lesser degree of pollutant discharge reduction than the BADCT established in the individual Aquifer Protection Permit previously issued for a facility, unless:
- 1. The industrial classification of the facility has changed so that a new assessment of BADCT is appropriate.
 - 2. The pollutant load has decreased or the pollutant composition has changed significantly to warrant a new assessment of the BADCT.
 - 3. The Director approves a corrective or contingency action that necessitates a change in the treatment technology, or
 - 4. The approved discharge control technology is not operating properly due to circumstances beyond the control of the owner or operator.

R18-9-A212. Permit Transfer

- A. ~~The owner or operator of a facility~~ person subject to the continuance requirements under R18-9-105(A)(1), ~~(A)(2)-(2), or (A)(3)~~ (3) shall notify the Department by certified mail within 15 days following a change of ownership. The notice shall include:
- 1. The name of the ~~transferor owner or operator~~ person transferring the facility;
 - 2. The name and social security number of the ~~new transferee owner or operator, if the transferee owner operator is an individual;~~
 - 3. The name and location of the facility;
 - 4. The written agreement between the ~~existing~~ person transferring the facility and the new ~~permittee~~ owner or operator indicating a specific date for transfer of all permit responsibility, coverage, and liability;
 - 5. A signed declaration by the new ~~permittee~~ owner or operator that the ~~permittee~~ new owner or operator has reviewed the permit and agrees to ~~be bound by its~~ the terms of the permit, including fee obligations under A.R.S. § 49-242; and
 - 6. The applicable fee established in 18 A.A.C. 14.
- B. A permittee may request that the Department transfer an individual permit to a new ~~permittee~~ owner or operator ~~if the Director amends the permit to identify the new permittee and holds the new permittee responsible for all conditions of the permit.~~
- 1. The new ~~permittee~~ owner or operator shall:
 - ~~1-a.~~ Notify the Department by certified mail within 15 days after the change of ownership of the transfer and include a written agreement between the existing previous and new permittee owner indicating a specific date for transfer of all permit responsibility, coverage, and liability;
 - ~~2-b.~~ Submit the applicable fee established in 18 A.A.C. 14;
 - ~~3-c.~~ Demonstrate the technical and financial capability necessary to fully carry out the terms of the permit according to R18-9-A202 and R18-9-A203;
 - ~~4-d.~~ Submit a signed statement by the new permittee that the new permittee owner or operator has reviewed the permit and agrees to be bound by its to the terms of the permit; and
 - ~~5-e.~~ Provide the Department with a copy of the Certificate of Disclosure if required by A.R.S. § 49-109.
 - 2. If the Director amends the individual permit for the transfer, the new permittee is responsible for all conditions of the permit.
- C. A permittee shall comply with ~~the all~~ all permit conditions ~~specified under A.R.S. §§ 49-241 through 49-252, and Articles 1 and 2 of this Chapter, regardless of whether the permittee has sold or disposed of the facility, until the Director transfers the permit, regardless of whether the permittee has sold or disposed of the facility.~~

R18-9-A213. Permit Suspension, Revocation, ~~or~~ Denial, or Termination

- A. The Director may, after notice and opportunity for hearing, suspend or revoke an individual permit or a continuance under

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R18-9-105(A)(1), ~~(A)(2)~~ (2), or ~~(A)(3)~~ (3) for any of the following:

1. A permittee failed to comply with any applicable provision of A.R.S. Title 49, Chapter 2, Article 3; Articles 1 and 2 of this Chapter; or any permit condition-;
 2. ~~A permittee's misrepresentation or omission of any~~ permittee misrepresented or omitted a fact, information, or data related to an Aquifer Protection Permit application or permit conditions condition-;
 3. The Director determines that a permitted activity is causing or will cause a violation of ~~any an~~ Aquifer Water Quality Standard at a point of compliance-;
 4. A permitted discharge is causing or will cause imminent and substantial endangerment to public health or the environment-;
 5. A permittee failed to maintain the financial capability under R18-9-A203(B); or
 6. A permittee failed to construct a facility within five years of permit issuance and:
 - a. It is necessary to update BADCT for the facility, and
 - b. The Department has not issued an amended permit under R18-9-A211(B)(6).
- B.** The Director may deny an individual permit if the Director determines upon completion of the application process that the applicant has:
1. Failed or refused to correct a deficiency in the permit application;
 2. Failed to demonstrate that the facility and the operation will comply with the requirements of A.R.S. §§ 49-241 through 49-252 and Articles 1 and 2 of this Chapter. ~~This determination shall be based~~ The Director shall base this determination on:
 - a. The information submitted in the Aquifer Protection Permit application,
 - b. Any information submitted to the Department following a public hearing, or
 - c. Any relevant information that is developed or acquired by the Department-; or
 3. Provided false or misleading information.
- C.** The Director shall terminate an individual permit if each facility covered under the individual permit:
1. Has closed and the Director issued a Permit Release Notice under R18-9-A209(C)(2)(c) or R18-9-A209(B)(3)(a)(ii) for the closed facility, or
 2. Is covered under another Aquifer Protection Permit.

R18-9-A214. Requested Coverage Under a General Permit

- A.** If a person who applied for or was issued an individual permit qualifies to operate a facility under a general permit established in Article 3 of this Chapter, the person may request that the individual permit be terminated and replaced by the general permit. The person shall submit the Notice of Intent to Discharge under R18-9-A301(B) with the appropriate fee established in 18 A.A.C. 14.
- B.** The individual permit is valid and enforceable with respect to a discharge from each facility until the Director determines that the discharge from each facility is covered under a general permit.
- C.** The owner or operator operating under a general permit shall comply with all applicable general permit requirements in Article 3 of this Chapter.

PART B. BADCT FOR SEWAGE TREATMENT FACILITIES

R18-9-B201. General Considerations and Prohibitions

- A.** Applicability. The requirements in this Article, ~~including BADCT requirements,~~ apply to all sewage treatment facilities, including expansions of existing sewage treatment facilities, that treat wastewater containing sewage, unless the discharge is ~~covered~~ authorized by a general permit under Article 3 of this Chapter.
- B.** The Director may specify alert levels, discharge limitations, design specifications, and operation and maintenance requirements in the permit that are based upon information provided by the applicant and that meet the requirements under A.R.S. § 49-243(B)(1).
- C.** The permittee shall ensure that a sewage treatment facility is operated by a person certified under 18 A.A.C. 5, Article 1, for the grade of the facility.
- ~~C.~~D.** The Director may specify adherence to an operation and maintenance plan as an Aquifer Protection Permit condition, based on consideration of the factors in A.R.S. § 49-243(B)(1). Operation and maintenance.
1. The owner or operator shall maintain, at the sewage treatment facility, an operation and maintenance manual for the facility and shall update the manual as needed.
 2. The owner or operator shall use the operation and maintenance manual to guide facility operations to ensure compliance with the terms of the Aquifer Protection Permit and to prevent any environmental nuisance described under A.R.S. § 49-141(A).
 3. The Director may specify adherence to any operation or maintenance requirement as an Aquifer Protection Permit condition to ensure that the terms of the Aquifer Protection Permit are met.
 4. The owner or operator shall make the operation and maintenance manual available to the Department upon request.
- ~~D.~~E.** A person shall not install or create or maintain a connection between any part of a sewage treatment facility and a potable water supply so that sewage or wastewater contaminates a potable or public water supply.

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- ~~E.F.~~ A person shall not bypass ~~untreated or release~~ sewage or partially treated sewage that has not completed the treatment process from a sewage treatment facility.
- ~~F.G.~~ Reclaimed water dispensed to a direct reuse site from a sewage treatment facility is regulated under Reclaimed Water Quality Standards ~~established under A.R.S. § 49-221(E) in 18 A.A.C. 11, Article 3 and reclaimed water permit requirements under A.R.S. § 49-203(A)(6).~~
- ~~G.H.~~ The preparation, transport, or land application of any biosolids generated by a sewage treatment facility is regulated under 18 A.A.C. ~~43 9~~, Article ~~15 10~~.
- ~~H.~~ The Department shall not publish a Notice of Preliminary Decision to issue an individual permit or amendment under R18-9-A211(B)(2)(b) or an amendment under R18-9-A211(B)(6) for a sewage treatment facility that is not in conformance with the Certified Areawide Water Quality Management Plan and the Facility Plan.
- I. The owner or operator of a sewage treatment facility that is a new facility or undergoing a major modification shall provide setbacks ~~from the nearest adjacent property line using the following information:~~ established in the following table. Setbacks are measured from the treatment and disposal components within the sewage treatment facility to the nearest property line of an adjacent dwelling, workplace, or private property. If an owner or operator cannot meet a setback for a facility undergoing a major modification that incorporates full noise, odor, and aesthetic controls, the owner or operator shall not further encroach into setback distances existing before the major modification except as allowed in subsection (I)(2).

Sewage Treatment Facility Design Flow (gallons per day)	No Noise, Odor, or Aesthetic Controls (feet)	Full Noise, Odor, and Aesthetic Controls (feet)
3000 to less than 24,000	250	25
24,000 to less than 100,000	350	50
100,000 to less than 500,000	500	100
500,000 to less than 1,000,000	750	250
1,000,000 or greater	1000	350

1. Full noise, odor, and aesthetic controls means that ~~all~~:
 - a. Noise due to the sewage treatment facility does not exceed 50 decibels at the facility property boundary on the A network of a sound level meter or a level established in a local noise ordinance.
 - b. All odor-producing components of the sewage treatment ~~components~~ facility are fully enclosed,
 - c. ~~odor~~ Odor scrubbers or other odor-control devices are installed on all vents, and
 - d. ~~fencing~~ Fencing is aesthetically matched to that in the area surrounding the facility.
 2. The owner or operator of a sewage treatment facility undergoing a major modification may decrease setbacks if:
 - a. Allowed by local ordinance; or
 - b. setback Setback waivers are obtained from affected property owners in which the property owner acknowledges awareness of the established setbacks, basic design of the sewage treatment facility, and the potential for noise and odor.
- J.** The owner or operator of a sewage treatment facility shall not operate the facility so that it emits an offensive odor on a persistent basis beyond the setback distances specified in subsection (I).

R18-9-B202. Application Requirements Design Report

- A.** ~~An applicant~~ A person applying for an individual permit shall submit a design report signed, dated, and sealed by an Arizona-registered professional engineer. The design report shall include the following information:
1. Wastewater characterization, including quantity, quality, seasonality, and impact of increased flows as the facility reaches design flow;
 2. The proposed method of disposal, including solids management;
 3. A description of the treatment unit processes and containment structures, including diagrams and calculations that demonstrate that the design meets BADCT requirements and will achieve treatment levels specified in R18-9-B204 through R18-9-B206, as applicable, for all flow conditions indicated in subsection (A)(9). If soil aquifer treatment or other aspects of site conditions are used to meet BADCT requirements, the applicant shall document performance of the site in the design report or the hydrogeologic report;

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4. A description of planned normal operation;
 5. ~~A description of operation and maintenance, an operation and maintenance plan, A description of key maintenance activities~~ and a description of contingency and emergency operation ~~of for the system facility~~;
 6. A description of construction management controls;
 7. A description of the ~~system~~ facility startup plan, including pre-operational testing, expected treated wastewater characteristics and monitoring requirements during startup, expected time-frame for meeting performance requirements specified in ~~R18-9-B204(C)~~ R18-9-B204, and any other special startup condition that may merit consideration in the individual permit;
 8. A site diagram depicting compliance with the setback requirements established in R18-9-B201(I) for the facility at design flow, and for each phase if the applicant proposes expansion of the facility in phases;
 9. ~~For a sewage treatment facility with design flow under one million gallons per day, a design report and engineering plans and specifications. The Director may waive this requirement if the Director previously approved engineering plans and specifications submitted by the same owner or operator for a sewage treatment facility with design flow of more than one million gallons per day; The following flow information in gallons per day for the proposed sewage treatment facility. If the application proposes expansion of the facility in phases, the following flow information for each phase:~~
 - a. The design flow of the sewage treatment facility. The design flow is the average daily flow over a calendar year calculated as the sum of all influent flows to the facility based on Table 1, Unit Design Flows, unless a different basis for determining influent flows is approved by the Department;
 - b. The maximum day. The maximum day is the greatest daily total flow that occurs over a 24-hour period within an annual cycle of flow variations;
 - c. The maximum month. The maximum month is the average daily flow of the month with the greatest total flow within the annual cycle of flow variations;
 - d. The peak hour. The peak hour is the greatest total flow during one hour, expressed in gallons per day, within the annual cycle of flow variations;
 - e. The minimum day. The minimum day is the least daily total flow that occurs over a 24-hour period within the annual cycle of flow variations;
 - f. The minimum month. The minimum month is the average daily flow of the month with the least total flow within the annual cycle of flow variations; and
 - g. The minimum hour. The minimum hour is the least total flow during one hour, expressed in gallons per day, within the annual cycle of flow variations; and
 10. A certification by an Arizona-registered professional engineer that all other aspects of the design, including pipe coding, auxiliary power sources, and separation requirements, comply with applicable statutes, rules, and codes. Specifications for pipe, standby power source, and water and sewer line separation.
- B.** ~~In addition to the technical and financial capability requirements specified in R18-9-A202 and R18-9-A203, the following requirements apply if construction or expansion of a private sewage treatment facility has been approved for treatment of sewage from a subdivision under R18-5-402. These requirements do not apply to a subdivision where each lot has an on-site wastewater treatment facility as defined in A.R.S. § 49-201 for sewage disposal:~~
1. ~~If responsibility for operation of the private sewage treatment facility will be conveyed to a homeowner's association or a private operator after construction, the applicant shall demonstrate that the homeowner's association or private operator is technically capable of carrying out the terms of the permit and all treatment performance requirements specified in R18-9-B204.~~
 2. ~~If responsibility for operation of the private sewage treatment facility will be conveyed to a homeowner's association or a private operator after construction, the applicant shall demonstrate that the homeowner's association or private operator is financially capable of carrying out the terms of the permit and all treatment performance requirements specified in R18-9-B204, including monitoring, recordkeeping, and assuring that the system is under continuous operational control by the correct classification of a certified operator, as specified in 18 A.A.C. 5, Article 1.~~
- B.** The Department may inspect an applicant's facility without notice to ensure that construction conforms to the design report.

R18-9-B203. Application Review and Approval Engineering Plans and Specifications

- A.** A person applying for an individual permit for a sewage treatment facility with a design flow under one million gallons per day, shall submit engineering plans and specifications to the Department. The Director may waive this requirement if the Director previously approved engineering plans and specifications submitted by the same owner or operator for a sewage treatment facility with a design flow of more than one million gallons per day.
- ~~**A.B.** To ensure that BADCT requirements are met, the Department shall ask to review~~ A person applying for an individual permit engineering plans and specifications for a sewage treatment facility with a design flow of one million gallons per day or greater shall submit engineering plans and specifications if, upon review of the design report required in R18-9-B202, the Department finds that:
1. ~~The design report required in R18-9-B202(A)~~ fails to provide sufficient detail to determine adequacy of the proposed

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sewage treatment facility design;

2. The described design is innovative and does not reflect treatment technologies generally accepted ~~as demonstrated~~ within the industry;
3. The Department's calculations of removal efficiencies based on the design report show that the treatment facility cannot achieve BADCT treatment performance requirements;
4. The design report does not demonstrate:
 - a. Protection from physical damage due to a 100-year flood,
 - b. Ability to continuously operate during a 25-year flood, or
 - c. Provision for a standby power source;
5. The design report shows inconsistency in sizing or compatibility between two or more unit process components of the sewage treatment facility;
6. The designer of the facility has:
 - a. Designed a sewage treatment facility of at least a similar size on less than three previous occasions,
 - b. Designed a sewage treatment facility that has been the subject of a Director enforcement action due to the facility design, or
 - c. Been found by the Board of Technical Registration to have violated a provision ~~of~~ in A.R.S. Title 32, Chapter 1;
7. The permittee seeks to expand its sewage treatment facility and the Department believes that ~~BADCT~~ the facility will require upgrades to the design ~~that have not been~~ described and evaluated in the design report to meet the treatment performance requirements; or
8. The construction does not conform to the design report if the sewage treatment facility has already been constructed.

~~B.C.~~ The Department shall review engineering plans and specifications ~~and a design report~~ upon request by an applicant seeking a permit for a sewage treatment facility, regardless of its flow.

~~C.D.~~ The Department may inspect an applicant's facility without notice to ensure that construction generally conforms to ~~the design report engineering plans and specifications, as applicable.~~

E. Before discharging under a permit, the permittee shall submit an Engineer's Certificate of Completion signed, dated, and sealed by an Arizona-registered professional engineer in a format approved by the Department, that confirms that the facility is constructed according to the Department-approved design report or plans and specifications, as applicable.

R18-9-B204. Treatment Performance Requirements For New Facilities for a New Facility

A. Definition. "Week" means a seven-day period starting on Sunday and ending on the following Saturday.

~~A.B.~~ An owner or operator of a new sewage treatment facility shall ensure that the facility meets the following performance requirements upon release of the treated wastewater at the outfall:

1. Secondary treatment levels.
 - a. Five-day biochemical oxygen demand (BOD₅) less than 30 mg/l (30-day average) and 45 mg/l (seven-day average), or carbonaceous biochemical oxygen demand (CBOD₅) less than 25 mg/l (30-day average) or 40 mg/l (seven-day average);
 - b. Total suspended solids (TSS) less than 30 mg/l (30-day average) and 45 mg/l (seven-day average);
 - c. pH maintained between 6.0 and 9.0 standard units; and
 - d. A removal efficiency of ~~85%~~ percent for BOD₅, CBOD₅, and TSS;
2. Secondary treatment by waste stabilization ponds is not considered BADCT unless an applicant demonstrates to the Department that site-specific hydrologic and geologic characteristics and other environmental factors are sufficient to justify ~~use of ponds or this method of treatment.~~ secondary treatment by waste stabilization ponds;
3. Total nitrogen in the treated wastewater is less than 10 mg/l (five-month rolling geometric mean). If an applicant demonstrates, using appropriate monitoring, that soil aquifer treatment will produce a total nitrogen concentration ~~of~~ less than 10 mg/l in wastewater that percolates to groundwater, the Department may approve soil aquifer treatment for removal of total nitrogen as an alternative to meeting the performance requirement of 10 mg/l at the outfall;
4. Pathogen removal.
 - a. ~~A~~ For a sewage treatment facility with a design flow of less than 250,000 gallons per day at a site where the depth to the seasonally high groundwater table is greater than 20 feet and there is no karstic or fractured bedrock at the surface; ~~A fecal coliform limit of 200 colony forming units per 100 ml (seven sample median) and 800 colony forming units per 100 ml (single sample maximum) applies if:~~
 - i. ~~Depth to the seasonally high groundwater table is greater than 20 feet, and~~
 - ii. ~~The system is not located above karstic or fractured bedrock.~~
 - i. The concentration of fecal coliform organisms in four of the wastewater samples collected during the week is less than 200 cfu/100 ml or the concentration of *E. coli* bacteria in four of the wastewater samples collected during the week is less than 126 cfu/100 ml, based on a sampling frequency of seven daily samples per week;
 - ii. The single sample maximum concentration of fecal coliform organisms in a wastewater sample is not greater than 800 cfu/100 ml or the single sample maximum concentration of *E. coli* bacteria in a wastewater sample is not greater than 504 cfu/100 ml; and

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- iii. An owner or operator of a facility may request a reduction in the monitoring frequency required in subsection (B)(4)(a)(i) if equipment is installed to continuously monitor an alternative indicator parameter and the owner or operator demonstrates that the continuous monitoring will ensure reliable production of wastewater that meets the numeric concentration levels in subsections (B)(4)(a)(i) and (ii) at the discharge point;
 - b. ~~Any~~ For any other sewage treatment facility: ~~A fecal coliform limit, using the membrane filter technique, of 2-2 colony forming units per 100 ml (seven sample median) and less than 23 colony forming units per 100 ml (single sample maximum), or equivalent numbers using the multiple tube fermentation method, applies:~~
 - i. No fecal coliform organisms or no *E. coli* bacteria are detected in four of the wastewater samples collected during the week, based on a sampling frequency of seven daily samples per week;
 - ii. The single sample maximum concentration of fecal coliform organisms in a wastewater sample is not greater than 23 cfu/100 ml or the single sample maximum concentration of *E. coli* is not greater than 15 cfu/100 ml;
 - iii. An owner or operator may request a reduction in the monitoring frequency required in subsection (B)(4)(b)(i) if equipment is installed to continuously monitor an alternative indicator parameter and the owner or operator demonstrates that the continuous monitoring will ensure reliable production of wastewater that meets the numeric concentration levels in subsections (B)(4)(b)(i) or (ii) at the discharge point;
 - c. ~~Unit~~ An owner or operator may use unit treatment processes, such as chlorination-dechlorination, ultraviolet, and ozone may be used to achieve this standard the pathogen removal performance requirements specified in subsections (B)(4)(a) and (b);
 - e.d. ~~The Department may approve soil aquifer treatment for the removal of fecal coliform or *E. coli* bacteria as an alternative to meeting the performance requirement in subsection (B)(4)(b) (B)(4)(a) or (b), if the soil aquifer treatment process will produce a fecal coliform or *E. coli* bacteria concentration less than that required under subsection (B)(4)(b) (B)(4)(a) or (b), in wastewater that percolates to groundwater;~~
 - 5. Unless governed by A.R.S. § 49-243(I), the performance requirement for each constituent regulated under R18-11-406(B) through (E) is the numeric Aquifer Water Quality Standard;
 - 6. The performance requirement for a constituent regulated under A.R.S. § 49-243(I) is removal to the greatest extent practical regardless of cost.
 - a. An operator shall minimize trihalomethane compounds generated as disinfection byproducts using chlorination, dechlorination, ultraviolet, or ozone as the disinfection system or using a technology demonstrated to have equivalent or better performance for removing or preventing trihalomethane trihalomethane compounds.
 - b. For other pollutants regulated by A.R.S. § 49-243(I), an operator shall use one of the following methods to achieve industrial pretreatment:
 - i. Regulate industrial sources of influent to the sewage treatment facility by setting limits on pollutant concentrations, monitoring for pollutants, and enforcing the limits to reduce, eliminate, or alter the nature of a pollutant before release into a sewage collection system; ~~or~~
 - ii. ~~Meet the pretreatment requirements of Section 307 of the Federal Water Pollution Control Act, 33 U.S.C. § 1362, or~~ A.R.S. § 49-255.02; or
 - iii. For sewage treatment facilities without significant industrial input, conduct periodic monitoring to detect industrial discharge; ~~and~~
 - 7. A maximum seepage rate less than 550 gallons per day per acre for all containment structures within the treatment works. A sewage treatment facility that consists solely of containment structures with no other form of discharge complies with ~~this Article 2, Part B,~~ by operating below the maximum 550 gallon per day per acre seepage rate.
- ~~B-C.~~ The Director shall incorporate treated wastewater discharge limitations and associated monitoring specified in this Section into the individual permit to ensure compliance with the BADCT requirements.
- ~~C-D.~~ An applicant shall formally request in writing and justify an alternative that allows less stringent performance than that established in this Section, based on the criteria specified in A.R.S. § 49-243(B)(1), ~~including in the justification a consideration of site-specific hydrologic and geologic characteristics and other environmental factors, facility size, method of wastewater disposal or direct reuse, proportion of sewage to total industrial wastewater volume, and the seasonality of the service area for the sewage treatment facility.~~
- E. If the request specified in subsection (D) involves treatment or disposal works that are a demonstration, experimental, or pilot project, the Director may issue an individual permit that places greater reliance on monitoring to ensure operational capability.

R18-9-B205. Treatment Performance Requirements for an Existing Facility

For ~~an existing~~ a sewage treatment facility that is an existing facility defined in A.R.S. § 49-201(16), the BADCT shall conform with the following:

1. The designer shall identify one or more design improvements that brings the facility closer to or within the treatment performance requirements specified in R18-9-B204, considering the factors listed in A.R.S. § 49-243(B)(1)(a) and (B)(1)(c) through ~~(B)(1)(h)~~ (h);
2. The designer may eliminate from consideration alternatives identified in subsection (1) that are more expensive than

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- the number of gallons of design flow times ~~\$0.05~~ \$1.00 per gallon; and
3. The designer shall select ~~as the BADCT for the facility~~ a design that incorporates one or more of the considered alternatives by giving preference to measures that will provide the greatest improvement toward meeting the treatment performance requirements specified in R18-9-B204.

R18-9-B206. Treatment Performance Requirements for Expansion of a ~~Permitted~~ Facility

For an expansion of a sewage treatment facility ~~with a current individual permit~~, the BADCT shall conform with the following:

1. New facility BADCT requirements ~~of in R18-9-B204~~ apply to the following expansions:
 - a. ~~Continue to apply for the part of the facility that conformed to the BADCT requirements for a new facility at the last permit issuance; An increase in design flow by an amount equal to or greater than the increases specified in R18-9-A211(B)(2)(b); or~~
 - b. ~~Apply to the~~ An addition of a physically separate process or major piece of production equipment, building, or structure that is physically separate from a facility and causes a separate discharge to the extent that the treatment performance requirements for the pollutants addressed in R18-9-B204 can practicably be achieved by the addition; and
 - c. ~~Apply to the part of the facility that has not been required to conform to BADCT requirements for new facilities; if a facility or part of a facility has undergone or will undergo any change identified in R18-9-A211(B)(2);~~
2. BADCT requirements for existing facilities established in R18-9-B205 apply to ~~expansions~~ an expansion not covered by subsections (1)(a), (1)(b), or (1)(c) under subsection (1).

ARTICLE 3. AQUIFER PROTECTION PERMITS – GENERAL PERMITS

PART A. GENERAL PROVISIONS

R18-9-A301. Discharging Under a General Permit

A. Discharging ~~Requirements~~ requirements.

1. Type 1 General Permit. A person may discharge under a Type 1 General Permit without submitting a Notice of Intent to Discharge if the discharge is authorized by and meets:
 - a. The applicable requirements of Article 3, Part A of this Chapter; and
 - b. The specific terms of the applicable Type 1 General Permit; established in Article 3, Part B of this Chapter.
2. Type 2 General Permit. A person may discharge under a Type 2 General Permit if:
 - a. The discharge is authorized by and meets the applicable requirements of Article 3, Part A of this Chapter and the specific terms of the applicable Type 2 General Permit established in Article 3, Part C of this Chapter;
 - b. The person files a Notice of Intent to Discharge under subsection (B); and
 - c. The person submits the applicable fee established in 18 A.A.C. 14.
3. Type 3 General Permit. A person may discharge under a Type 3 General Permit if:
 - a. The discharge is authorized by and meets the applicable requirements of Article 3, Part A of this Chapter and the specific terms of the applicable Type 3 General Permit established in Article 3, Part D of this Chapter; ~~and~~
 - b. The person files a Notice of Intent to Discharge under subsection (B);
 - c. The person satisfies any deficiency requests from the Department regarding the administrative completeness review and substantive review and receives a written ~~Verification of General Permit Conformance~~ Discharge Authorization from the Director; and
 - d. The person submits the applicable fee established in 18 A.A.C. 14.
4. Type 4 General Permit. A person may discharge under a Type 4 General Permit if:
 - a. The discharge is authorized by and meets the applicable requirements of Article 3, Part A of this Chapter and the specific terms of the applicable Type 4 General Permit; established in Article 3, Part E of this Chapter;
 - b. The person files a Notice of Intent to Discharge under subsection (B);
 - c. The person satisfies any deficiency requests from the Department regarding the administrative completeness review and substantive review, including ~~deficiencies~~ any deficiency relating to the construction of the facility; ~~and~~
 - d. The person receives a written ~~Verification of General Permit Conformance~~ Discharge Authorization from the Director ~~before the facility discharges~~; and
 - ~~d-e.~~ The person submits the applicable fee established in 18 A.A.C. 14 or according to A.R.S. §§ 49-107 and 49-112.

B. Notice of Intent to Discharge.

1. A person seeking a Discharge Authorization under a general permit under subsections (A)(2), ~~(A)(3)~~ (3), or ~~(A)(4)~~ (4) shall submit, by certified mail, in person, or by another method approved by the Department, a Notice of Intent to Discharge on a form provided by the Department.
2. The Notice of Intent to Discharge shall include:

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- a. The name, address, and telephone number of the applicant;
 - ~~b. The social security number of the applicant, if the applicant is an individual;~~
 - ~~e-b.~~ The name, address, and telephone number of a contact person familiar with the operation of the facility;
 - ~~d-c.~~ The name, position, address, and telephone number of the owner or operator of the facility who has overall responsibility for compliance with the permit;
 - ~~e-d.~~ The legal description of the discharge areas, including the latitude and longitude coordinates;
 - ~~f-e.~~ A narrative description of the facility or project, including expected dates of operation, rate, and volume of discharge;
 - ~~g-f.~~ ~~The information required for the general permit~~ The additional requirements, if any, specified in the general permit for which the authorization is being sought;
 - ~~h-g.~~ A listing of any other federal or state environmental permits issued for or needed by the facility, including any individual permit, Groundwater Quality Protection Permit, or Notice of Disposal that may have previously authorized the discharge; and
 - ~~i-h.~~ A signature on the Notice of Intent to Discharge certifying that the ~~permittee~~ applicant agrees to comply with all applicable requirements of this Article, including specific terms of the applicable general permit.
3. Receipt of a completed Notice of Intent to Discharge by the Department begins the administrative completeness review for a Type 3 or Type 4 General Permit.
- C. Type 3 General Permit authorization review.
1. Inspection. The Department may inspect the facility to determine that the applicable terms of the general permit have been met.
 2. ~~Verification~~ Discharge Authorization issuance.
 - a. If the Department determines, based on its review and an inspection, if conducted, that the facility conforms ~~with~~ to the requirements of the general permit and the applicable requirements of this Article, the Director shall issue a ~~Verification of General Permit Conformance~~ Discharge Authorization.
 - b. The ~~Verification of General Permit Conformance~~ Discharge Authorization authorizes the person to discharge under terms of the general permit and applicable requirements of this Article.
 3. ~~Verification~~ Discharge Authorization denial. If the Department determines, based on its review and an inspection, if conducted, that the ~~discharge facility~~ does not conform to the requirements of the general permit or other applicable requirements of this Article, the Director shall notify the person of ~~its~~ the decision not to issue the ~~Verification of General Permit Conformance~~ Discharge Authorization and the person shall not discharge under the general permit. The notification shall inform the person of:
 - a. The reason for the denial with reference to the statute or rule on which the denial is based;
 - b. The person's right to appeal the denial, including the number of days the applicant has to file a protest challenging the denial and the name and telephone number of the Department contact person who can answer questions regarding the appeals process; and
 - c. The person's right to request an informal settlement conference under A.R.S. §§ 41-1092.03(A) and 41-1092.06.
- D. Type 4 General Permit review.
1. Pre-construction phase and facility construction. A person shall not begin facility construction until the Director issues a Construction Authorization.
 - a. Inspection. The Department may inspect the facility site before construction to determine that the applicable terms of the general permit will be met.
 - b. Review. If the Department determines, based on an inspection or its review of, design plans, specifications, or other required documents, ~~or an inspection,~~ that the facility does not conform ~~with~~ to the requirements of the general permit or other applicable requirements of this Article, the Department shall make a written request for additional information to determine whether the facility will meet the requirements of the general permit.
 - c. ~~Notification of provisional verification~~ Construction Authorization. If the Department determines, based on the review described in subsection (D)(1)(b) and any additional information submitted in response to a written request, that the facility design conforms with the requirements of the general permit and other applicable requirements of this Article, the Director shall ~~provide a notification of Provisional Verification of General Permit Conformance~~ issue a Construction Authorization to the person seeking to discharge. A Construction Authorization for an on-site wastewater treatment facility shall contain:
 - i. The design flow of the facility.
 - ii. The characteristics of the wastewater sources contributing to the facility.
 - iii. The general permits that apply, and
 - iv. A list of the documents that are the basis for the authorization.
 - d. ~~Notification of failure to conform to general permit requirements~~ Construction Authorization denial. If the Department determines, based on the review described in subsection (D)(1)(b) and any additional information submitted in response to a written request, that the facility design does not conform to the ~~terms~~ requirements of the general permit ~~and~~ or other applicable requirements of this Article, the Director shall notify the person ~~seek-~~

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- ~~ing to discharge of its~~ the decision not to issue a Verification of General Permit Conformance Construction Authorization. The notification shall follow the requirements of subsection (D)(2)(d) include the information listed in subsections (D)(2)(d).
- e. Construction.
 - ~~i. The person seeking to discharge shall not begin facility construction until the Director provides notification of Provisional Verification of General Permit Conformance.~~
 - ~~ii. The A person seeking verification to discharge may take up to two years to~~ shall complete construction within two years of receiving a Construction Authorization.
 - ~~iii. ii.~~ Construction shall conform with the plans and documents verified by the Department under subsection (D)(1)(b) approved by the Department in the Construction Authorization. A change in location, configuration, dimension, depth, material, or installation procedure does not require approval by the Department if the change continues to conform with the specific standard in this Article used as the basis for the original design.
 - ~~iv. iii. All~~ The person shall record all changes made during construction, including any changes approved under R18-9-A312(G), ~~shall be recorded~~ on the site plan as specified in R18-9-A309(C)(1) or on applicable documents as specified in R18-9-A309(C)(2) or R18-9-E301(E), as applicable.
 - f. Completion of construction.
 - i. After completing construction of the facility, the person seeking to discharge shall submit ~~to the Department the any~~ applicable verification documents specified in R18-9-A309(C) with the Request for Discharge Authorization form for an on-site wastewater treatment facility and the Engineer's Certificate of Completion specified in R18-9-E301(E) for a sewage collection system. Receipt of the documents by the Department initiates the post-construction review phase.
 - ii. If the Department ~~receives no verification documents~~ does not receive the documentation specified in subsection (D)(1)(f)(i) by the end of the two-year construction period, the Notice of Intent to Discharge expires, and the person shall not continue construction or discharge.
 - iii. If the Notice of Intent to Discharge expires, the person shall submit a new Notice of Intent to Discharge under subsection (B) and the applicable fee under subsection (A)(4)(e) to begin or continue construction.
 2. Post-construction phase.
 - a. Inspection. The Department may inspect the facility before issuing a ~~Verification of General Permit Conformance Discharge Authorization~~ to determine ~~that whether:~~
 - i. The construction conforms with the design ~~verified~~ authorized by the Department under subsection ~~(D)(2)(e) (D)(1)(c)~~ and any changes recorded on the site plan as specified ~~by in~~ in R18-9-A309(C)(1) or other documents as specified ~~by in~~ in R18-9-A309(C)(2) or R18-9-E301(E), as applicable; and
 - ii. Terms of the general permit and applicable terms of this Article ~~will be~~ are met.
 - b. Deficiencies. If the Department identifies deficiencies ~~based on an inspection of in~~ the constructed facility or in during the review of documents submitted in fulfillment of the Verification of General Permit Conformance with the request for the Discharge Authorization, the Director shall provide a written explanation of the deficiencies to the person.
 - c. ~~Verification of General Permit Conformance Discharge Authorization~~ issuance.
 - i. Upon satisfactory completion of construction and documents required under R18-9-A309(C)(1), ~~or~~ R18-9-A309(C)(2), or R18-9-E301(E), as applicable, the Director shall issue a ~~Verification of General Permit Conformance Discharge Authorization.~~
 - ii. The ~~Verification of General Permit Conformance~~ authorizes the Discharge Authorization allows a person to discharge under terms of the general permit and applicable requirements of this Article and the stated terms of the Construction Authorization.
 - d. ~~Verification Discharge Authorization~~ denial. If, after receiving evidence of correction submitted by the person seeking to discharge, the Department determines that the deficiencies are not satisfactorily corrected, the Director shall notify the person seeking to discharge of the Director's decision not to issue the ~~Verification of General Permit Conformance Discharge Authorization~~ and the person shall not discharge under the general permit. The notification shall inform the person of:
 - i. The reason for the denial with reference to the statute or rule on which the denial is based;
 - ii. The person's right to appeal the denial, including the number of days the applicant has to file a protest challenging the denial and the name and telephone number of the Department contact person who can answer questions regarding the appeals process; and
 - iii. The person's right to request an informal settlement conference under A.R.S. §§ 41-1092.03(A) and 41-1092.06.

R18-9-A303. Permit Renewal of a Discharge Authorization

- A. Unless a Discharge Authorization under a general permit is transferred, revoked, or expired, a facility is authorized to per-
son may discharge under the general permit for the operational life of the facility authorization period as specified by the

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permit type, including any closure activities required by a specific general permit.

B. An authorization to discharge under a Type 1 or Type 4 General Permit is valid for the operational life of the facility.

~~B-C.~~ A permittee authorized under a Type 2 or Type 3 General Permit shall submit the an application for renewal on a form provided by the Department with the applicable fee established in 18 A.A.C. 14 at least 90 30 days before the end of the renewal period.

1. The following are the renewal periods for Type 2 ~~General Permits~~ and Type 3 General ~~Permits~~ Permit Discharge Authorizations:

- a. 2.01 General Permit, five years;
- b. 2.02 General Permit, seven years;
- c. 2.03 General Permit, two years;
- d. 2.04 General Permit, five years;
- e. 2.05 General Permit, five years;
- f. 2.06 General Permit, five years; and
- ~~d-g.~~ Type 3 General Permits, five years.

2. The renewal period for coverage under a Type 2 General Permit begins on the date of the Department's receipt of Department receives the Notice of Intent to Discharge.

3. The renewal period for coverage under a Type 3 General Permit begins on the date ~~that~~ the Director issues the written Verification of General Permit Conformance Discharge Authorization.

~~C-D.~~ If the general permit Discharge Authorization is not renewed within the renewal period specified in subsection (B)(1), the general permit Discharge Authorization expires.

R18-9-A304. Notice of Transfer

A. Transfer of authorization under a Type 1 General Permit.

1. A permittee transferring ownership of a facility covered by a Type 1.01 through 1.08, or 1.10 through 1.12 General Permit is not required to notify the Department of the transfer.
2. A permittee transferring ownership of an on-site wastewater treatment facility operating under a Type 1.09 General Permit shall follow the requirements under R18-9-A316.
3. A permittee transferring ownership of a sewage treatment facility operating under a Type 1.09 General Permit shall submit a Notice of Transfer to the Department by certified mail within 15 days after the date that ownership changes.

B. Transfer of authorization under a Type 2, 3, or 4.01 General Permit.

1. If a change of ownership occurs for a facility covered by a Type 2, Type 3, or Type 4 4.01 General Permit facility, the permittee shall provide a Notice of Transfer to the Department or to the health or environmental agency delegated by the Director to administer Type 4.01 General Permits, by certified mail within 15 days after the date that ownership changes. The Notice of Transfer, on a form approved by the Department, shall include:

- ~~1-a.~~ Any information that has changed from the original Notice of Intent to Discharge,
- ~~2-b.~~ Any other transfer requirements specified for the general permit, and
- ~~3-c.~~ The applicable fee established in 18 A.A.C. 14.

~~B-2.~~ The Department may require a permittee covered by a Type 2, Type 3, or Type 4 4.01 General Permit ~~permittee~~ to submit a new Notice of Intent to Discharge and to obtain a new verifications authorization under R18-9-A301(A)(3) R18-9-A301(A)(2), (3) and (A)(4) (4), as applicable, if the volume or characteristics of the discharge have changed from the original application.

C. Transfer of a Type 4.02 through 4.23 General Permit. A permittee transferring ownership of an on-site wastewater treatment facility operating under one or more Type 4.02 through 4.23 General Permits shall follow the requirements under R18-9-A316.

R18-9-A305. Facility Expansion

A. A permittee may expand a facility covered by a Type 2 General Permit ~~facility may be expanded~~ if, before the expansion, the permittee provides the Department with the following information by certified mail:

1. An updated Notice of Intent to Discharge,
2. A certification signed by the facility owner stating that the expansion continues to meet all the conditions of the applicable general permit, and
3. The applicable fee established under 18 A.A.C. 14.

B. A permittee may expand a facility covered by a Type 3 or Type 4 General Permit ~~facility may be expanded contingent on review if the permittee submits a new Notice of Intent to Discharge and verification by the Department issues a new Discharge Authorization of a new Notice of Intent to Discharge.~~

1. The person submitting the Notice of Intent to Discharge for the expansion may reference the previous Notice of Intent to Discharge if the previous information is identical, but shall provide full and detailed information for any changed items.
2. The Notice of Intent to Discharge shall include:
 - a. Any applicable fee established ~~by~~ under 18 A.A.C. 14, and

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- b. A certification signed by the facility owner stating that the expansion continues to meet all of the requirements relating to the applicable general permit.
3. Upon receiving the Notice of Intent to Discharge, the Department shall follow the applicable review and ~~verification~~ authorization procedures described in R18-9-A301(A)(3) or ~~(A)(4) (4)~~.

R18-9-A306. Closure

- ~~A.~~ In addition to the closure requirements specified in a general permit, a permittee shall submit the closure plan specified under A.R.S. § 49-252.
- ~~B.~~ The closure plan submitted under A.R.S. § 49-252 meets the clean closure requirement if the permittee:
 1. Removes material that may contribute to a continued discharge; and
 2. Eliminates, to the greatest degree practical, any reasonable probability of further discharge from the facility and of exceeding Aquifer Water Quality Standards at the applicable point of compliance.
- ~~C.~~ For an on-site wastewater treatment facility or a 1.09 General Permit facility, a permittee shall comply with the requirements of R18-9-A309(D) to meet the requirements of this Section.
- ~~A.~~ To satisfy the requirements under A.R.S. § 49-252, a permittee shall close a facility authorized to discharge under a general permit as follows:
 1. If the discharge is authorized under a Type 1.01 through 1.08, 1.10, 1.11, 2.05, 2.06, or 4.01 General Permit, closure notification is unnecessary and clean closure is met when:
 - a. The permittee removes material that may contribute to a continued discharge; and
 - b. The permittee eliminates, to the greatest degree practical, any reasonable probability of further discharge from the facility and of exceeding any Aquifer Water Quality Standard at the applicable point of compliance;
 2. For a discharge authorized under a Type 2.02, 3.02, 3.05 through 3.07, or 4.23 General Permit, the facility meets clean closure requirements if the permittee provides notice and submits sufficient information for the Department to determine that:
 - a. Any material that may contribute to a continued discharge is removed;
 - b. The permittee has eliminated to the greatest degree practicable any reasonable probability of further discharge from the facility and of exceeding any Aquifer Water Quality Standard at the applicable point of compliance; and
 - c. Closure requirements, if any, established in the general permit are met;
 3. If the discharge is authorized under a Type 1.12, 2.01, 2.03, 2.04, 3.01, 3.03, or 3.04 General Permit, the permittee shall comply with the closure requirements in the general permit;
 4. If the discharge is from an on-site wastewater treatment facility authorized under a Type 1.09 or 4.02 through 4.22 General Permit, the permittee shall comply with the closure requirements in R18-9-A309(D); and
 5. If the discharge is from a sewage treatment facility authorized under a Type 1.09 General Permit, the permittee shall comply with the closure requirements under subsection (A)(1).
- ~~DB.~~ For a facility operating under a general permit and located at a site where an individual area-wide permit has been issued, a permittee may defer some or all closure activities required by this subsection if the Director approves the deferral in writing. The permittee shall complete closure activities ~~shall be performed~~ no later than the date that the closure activities identified in the individual area-wide permit are performed.

R18-9-A307. ~~Permit~~ Revocation of Coverage Under a General Permit

- ~~A.~~ The After notice and opportunity for a hearing, the Director shall may revoke coverage under a general permit and require the permittee to obtain an individual permit for any of the following:
 1. The permittee fails to comply with the terms of the general permit as described in this Article, or
 2. The discharge activity conducted under the terms of ~~a~~ the general permit causes or contributes to the violation of an Aquifer Water Quality Standard at the applicable point of compliance.
- ~~B.~~ The Director ~~shall may~~ revoke coverage under a general permit for any or all facilities within a specific geographic area, if, due to geologic or hydrologic conditions, the cumulative discharge of the facilities has violated or will violate an Aquifer Water Quality Standard established under A.R.S. §§ 49-221 and 49-223. Unless the public health or safety is jeopardized, the Director may allow continuation of a discharge ~~for the revoked general permit~~ until the Department:
 1. ~~Processes the application for~~ Issues a single individual permit, ~~or~~
 2. Authorizes a discharge under another general permit, or
 - ~~2.3. Consolidates the discharges authorized under the general permits by following R18-9-107 and issues single individual permit to a political subdivision that has jurisdiction over the specific geographic area.~~
- ~~C.~~ If an individual permit is issued to replace general permit coverage, the coverage under the general permit allowing the discharge is automatically revoked upon issuance of the individual permit and notification under subsection (E) is not required.
- ~~C.D.~~ Unless allowed under subsection (B), if If the Director revokes coverage under a general permit, the facility shall not discharge unless allowed under subsection (B) or under an individual permit.
- ~~D.E.~~ The If coverage under the general permit is revoked under subsections (A) or (B), the Director shall notify a the permittee

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by certified mail of its ~~the~~ decision to revoke a general permit. The notification shall include:

1. A brief statement of the reason for the decision;
2. The effective revocation date of the general permit coverage;
3. A statement of whether the discharge shall cease or whether the discharge may continue under the terms of revocation in subsection (B);
4. Whether the Director requires a person to obtain an individual permit, and if so:
 - a. An individual permit application form, and
 - b. Identification of a deadline between 90 and 180 days after receipt of the notification for filing the application;
5. The applicant's right to appeal the revocation, the number of days the applicant has to file an appeal, and the name and telephone number of the Department contact person who can answer questions regarding the appeals process; and
6. The applicant's right to request an informal settlement conference under A.R.S. §§ 41-1092.03(A) and 41-1092.06.

R18-9-A309. General Provisions ~~For Type 4 General Permits Concerning~~ On-site Wastewater Treatment Systems Facilities

A. General requirements and prohibitions.

1. ~~Sewage~~ No person shall discharge sewage or wastewater that contains sewage ~~shall not be discharged~~ from an on-site wastewater treatment facility except under an Aquifer Protection Permit issued by the Director.
2. A person shall not install, allow to be installed, or maintain a connection between any part of an on-site wastewater treatment facility and a drinking water system or supply so that sewage or wastewater contaminates the drinking water.
3. A person shall not bypass or release untreated sewage or partially treated sewage that has not completed the treatment process from an on-site wastewater treatment facility.
4. A person shall not use a cesspool for sewage disposal.
5. ~~The Department shall require connection to a sewage collection system if the connection is practical. A connection is practical if the distance to connect to the sewer is 400 feet or less and the total cost of the connection is less than \$6000 if capacity is available and performance of the sewage collection system and receiving sewage treatment facility are not impaired. A person constructing a new on-site wastewater treatment facility or replacing the treatment works or disposal works of an existing on-site wastewater treatment facility shall connect to a sewage collection system if:~~
 - a. One of the following applies:
 - i. A provision of a Nitrogen Management Area designation under R18-9-A317(C) requires connection;
 - ii. A county, municipal, or sanitary district ordinance requires connection; or
 - iii. The on-site wastewater treatment facility is located within an area identified for connection to a sewage collection system by a Certified Area-wide Water Quality Management Plan adopted under 18 A.A.C. 5 or a master plan adopted by a majority of the elected officials of a board or council for a county, municipality, or sanitary district; or
 - b. A sewer service line extension is available at the property boundary and both of the following apply:
 - i. The service connection fee is not more than \$6000 for a dwelling or \$10 times the daily design flow in gallons for a source other than a dwelling, and
 - ii. The cost of constructing the building sewer from the wastewater source to the service connection is not more than \$3000 for a dwelling or \$5 times the daily design flow in gallons for a source other than a dwelling.
6. The Department shall prohibit installation of an on-site wastewater treatment facility if the installation will create an unsanitary condition or environmental nuisance or cause or contribute to a violation of an Aquifer Water Quality Standard.
7. ~~A permittee shall service or repair an operating on-site wastewater treatment facility, or install a replacement facility if the facility has created or if its use creates an unsanitary condition or environmental nuisance or has caused or causes a violation of an Aquifer Water Quality Standard.~~
8. ~~A permittee person shall operate the permitted on-site wastewater treatment facility so that:~~
 - a. ~~Flows to the facility consist of typical sewage and do not include any motor oil, gasoline, paint, varnish, solvent, pesticide, fertilizer, or other material not generally associated with toilet flushing, food preparation, laundry, and or personal hygiene;~~
 - b. ~~Flows to the facility from commercial operations do not contain hazardous substances or hazardous wastes; as defined under A.R.S. § 49-921(5) or hazardous substances;~~
 - c. ~~A typical sewage flow with a component If the sewage contains a component of nonresidential flow from non-residential such as food preparation, or laundry service, or other source, the sewage is adequately pretreated by an interceptor that complies with R18-9-A315 or another device authorized by a general permit or approved by the Department under R18-9-A312(G);~~
 - d. ~~Except as provided in subsection (A)(8)(e) (A)(7)(c), a sewage flow that does not meet the numerical levels for typical sewage is adequately pretreated to meet the numerical levels before entry into an on-site wastewater treatment facility authorized by this Article;~~

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- e. Flow to the facility does not exceed the design flow specified in the ~~Verification of General Permit Conformance~~ Discharge Authorization;
- f. The facility does not create an unsanitary condition or environmental nuisance, or cause or contribute to a violation of either a Aquifer Water Quality Standard or a Surface Water Quality Standard; and
- ~~f.g.~~ Activities at the site do not adversely affect the operation of the facility.
- 8. A person shall control the discharge of total nitrogen from an on-site wastewater treatment facility as follows:
 - a. For an on-site wastewater treatment facility operating under the 1.09 General Permit or proposed for construction in a Notice of Intent to Discharge under a Type 4 General Permit and the facility is located within a Nitrogen Management Area, the provisions of R18-9-A317(D) apply;
 - b. For an on-site wastewater treatment facility proposed for construction in a Notice of Intent to Discharge under R18-9-E323, the provisions of R18-9-E323(A)(4) apply;
 - c. For a subdivision proposed under 18 A.A.C. 5, Article 4, for which on-site wastewater treatment facilities are used for sewage disposal, the permittee shall demonstrate in the geological report required in R18-5-408(E)(1) that total nitrogen loading from the on-site wastewater treatment facilities to groundwater is controlled by providing one of the following:
 - i. For a subdivision platted for a single family dwelling on each lot, calculations that demonstrate that the number of lots within the subdivision does not exceed the number of acres contained within the boundaries of the subdivision;
 - ii. For a subdivision platted for dwellings that do not meet the criteria specified in subsection (A)(8)(c)(i), calculations that demonstrate that the nitrogen loading over the total area of the subdivision is not more than 0.088 pounds (39.9 grams) of total nitrogen per day per acre calculated at a horizontal plane immediately beneath the active treatment of the disposal fields, based on a total nitrogen contribution to raw sewage of 0.0333 pounds (15.0 grams) of total nitrogen per day per person; or
 - iii. An analysis by another means of demonstration showing that the nitrogen loading to the aquifer due to on-site wastewater treatment facilities within the subdivision does not cause or contribute to a violation of the Aquifer Water Quality Standard for nitrate at the applicable point of compliance.
- 9. Repairs.
 - a. A Notice of Intent to Discharge is not required for routine work that maintains a facility.
 - b. The following work is not considered routine work and a Notice of Intent to Discharge is required:
 - i. Converting a facility from operation only under gravity to one requiring a pump or other powered equipment for treatment or disposal;
 - ii. Modifying or replacing a facility operating under the 1.09 General Permit with a different type of treatment or disposal technology;
 - iii. Changing the treatment works or disposal works of a facility authorized under one or more Type 4 General Permits to a technology covered by any other Type 4 General Permit;
 - iv. Extending the disposal works more than 10 feet beyond the footprint of the original disposal works;
 - v. Reconstructing any part of the disposal works in soil that is inadequate for the treated wastewater flow or strength;
 - vi. Expanding the footprint of the facility into or within setback buffers established in R18-9-A312(C);
 - vii. Reconstructing the disposal works so that it does not meet the vertical separation requirements specified in R18-9-A312(E);
 - viii. Modifying a treatment works or disposal works to accommodate a daily design flow or waste load greater than the daily design flow or waste load applicable to the original facility; or
 - ix. Replacing the treatment works.
 - c. Components used in a repair shall meet the design, installation, and operational requirements of this Article.
 - d. A permittee shall comply with any local ordinance that provides independent permitting requirements for repair work.
 - e. A person shall not modify the facility so as to create an unsanitary condition or environmental nuisance or cause or contribute to an exceedance of a water quality standard.
- 10. Cumulative flows. When there is more than one on-site wastewater treatment facility on a property or on a site under common ownership or subject to a larger plan of sale or development, the Director shall determine whether an individual permit is required or whether the applicant qualifies for coverage to discharge under a general permit based on the sum of the design flows from the proposed installation and existing on-site wastewater treatment facilities on the property or site.
 - a. If the sum of the design flows is less than 3000 gallons per day, the Department will process the application under R18-9-E302 through R18-9-E322, as applicable.
 - b. If the sum of the design flows is equal to or more than 3000 gallons per day but less than 24,000 gallons per day, the Department will process the application under R18-9-E323.
 - c. If the sum of the design flows is equal to or more than 24,000 gallons per day, the project does not qualify for

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coverage under a Type 4 General Permit and the applicant shall submit an application for an individual permit under Article 2 of this Chapter.

- B.** Notice of Intent to Discharge under a Type 4 General Permit. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B), an applicant shall submit the following information in a format approved by the Department:
1. A site investigation report that summarizes the results of the site investigation conducted under ~~R18-9-A310(C)~~ R18-9-A310(B), including:
 - a. Results from any soil evaluation, percolation test, or seepage pit performance test; ~~and~~
 - b. Any surface limiting site conditions condition identified by the site investigation in R18-9-A310(C)(2); and
 - c. Any subsurface limiting condition identified in R18-9-A310(D)(2);
 2. A site plan that includes:
 - a. The parcel and lot number, if applicable, the property address or other appropriate legal description, the property size in acres, and the boundaries of the property ~~on which the on-site wastewater treatment facility will be installed;~~
 - b. A plan of the site drawn to scale, dimensioned, and with a north arrow that shows:
 - i. Proposed and existing on-site wastewater treatment facilities; dwellings and other buildings; driveways, swimming pools, tennis courts, wells, ponds, and any other paved, concrete, or water feature; ~~and down slopes and cut banks with a slope greater than 15 percent;~~ retaining walls; and any other constructed feature that affects proper location, design, construction, or operation of the facility;
 - ii. Any feature less than 200 feet ~~outside the property boundary~~ from the on-site wastewater treatment facility excavation and reserve area that constrains the location of the on-site wastewater treatment facility because of setback limitations specified in R18-9-A312(C);
 - iii. Topography, delineated with an appropriate contour interval, showing original and post-installation grades;
 - iv. Location and identification of the treatment and disposal works and ~~connecting~~ wastewater pipelines, the reserve disposal area, and location and identification of all sites of percolation testing and soil evaluation performed under R18-9-A310; and
 - v. Location of any public sewer if 400 feet or less from the property line;
 - e. ~~For improvements in areas in which occupancy of property may depend on installation of a drinking water well and an on-site wastewater treatment facility, the location of features within the boundaries of each adjoining undeveloped property if setback requirements may mutually constrain well, cut bank, and on-site wastewater treatment facility locations.~~
 3. ~~Design flow, sources of flow, and characteristics of the sewage. The applicant shall calculate the design flow from a list included with the site plan showing the applicable unit sewage flows into the on-site wastewater treatment facility. The applicant shall prepare this list based on Table 1, Unit Daily Design Flows and include the number of bedrooms and plumbing fixtures if the facility serves a residence. The design flow of the on-site wastewater treatment facility expressed in gallons per day based on Table 1, Unit Design Flows, the expected strength of the wastewater if the strength exceeds the levels for typical sewage, and:~~
 - a. For a single family dwelling, a list of the number of bedrooms and plumbing fixtures and corresponding unit flows used to calculate the design flow of the facility; and
 - b. For a dwelling other than for a single family, a list of each wastewater source and corresponding unit flows used to calculate the design flow of the facility;
 4. A list of materials, components, and equipment for constructing the on-site wastewater treatment facility;
 5. Drawings, reports, and other information that are clear, reproducible, and in a size and format specified by the Department; and
 - 4-6. For a facility that includes treatment or disposal works permitted under R18-9-E303 through R18-9-E323:
 - a. Construction quality drawings that show the following:
 - ~~a.i.~~ Systems, subsystems, and key components, including manufacturer's name, model number, and associated construction notes and inspection milestones, as applicable;
 - ~~b.ii.~~ A title block, including facility owner, revision date, space for addition of the Department's application number, and page numbers;
 - ~~e.iii.~~ A plan and profile with the elevations of wastewater pipelines, and treatment and disposal components, including calculations justifying the absorption area, to allow Department verification of hydraulic and performance characteristics;
 - ~~d.iv.~~ Cross sections showing wastewater pipelines, construction details and elevations of treatment and disposal components, original and finished grades of the land surface, seasonal high water table if less than 10 feet below the bottom of a disposal field works or 60 feet below the bottom of a seepage pit, and a soil elevation evaluation to allow ~~the Department to verify~~ verification of installation design and performance; and
 - ~~e.v.~~ Drainage pattern, drainage controls, and erosion protection, as applicable, for the facility; and
 - f. Construction quality drawings are not required if the entire facility at the site, including treatment and disposal works, is permitted under R18-9-E302.

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facility not more than ~~five~~ 5 feet outside the building foundation if practical, or cut and plug as close to each end as possible; and

5. Notify the ~~applicable county health or environmental department~~ Department within 30 days of closure.

E. Proprietary and other reviewed products.

1. The Department shall maintain a list of proprietary and other reviewed products that may be used for on-site wastewater treatment facilities to comply with the requirements of this Article. The list shall include appropriate information on the applicability and limitations of each product.
2. The list of proprietary and other reviewed products may include manufactured systems, subsystems, or components within the treatment works and disposal works if the products significantly contribute to the treatment performance of the system or provide the means to overcome site limitations. The Department ~~shall~~ will not list septic tanks, effluent filters or components that do not significantly affect treatment performance or provide the means to overcome site limitations.
3. A person may request that the Department add a product to the list of proprietary and other reviewed products. The request may include a proposed reference design for review. The Department shall ensure that performance values in the list reflect the treatment performance for defined wastewater characteristics. The Department ~~may~~ shall assess fees under R18-14-102 18 A.A.C. 14 for product review.
4. ~~The Director may contract for services in administering this subsection.~~

F. Recordkeeping. A permittee authorized to discharge under one or more Type 4 General Permits shall maintain the Discharge Authorization and associated documents for the life of the facility.

R18-9-A310. Site Investigation ~~For~~ for Type 4 On-site Wastewater Treatment Facilities

- A. Definition. For purposes of this Section, “clean water” means water free of colloidal material or additives that could affect chemical or physical properties if the water is used for percolation ~~testing or testing of~~ seepage pit performance testing.
- B. ~~The investigator shall perform Site investigation.~~ An applicant shall ensure that an investigator qualified under subsection (H) conducts a site investigation if an on-site wastewater treatment facility is proposed for installation consisting of a surface characterization under subsection (C) and a subsurface characterization under subsection (D). The applicant shall submit the ~~following information results~~ results in a format prescribed by the Department, ~~and~~ The site investigation shall provide sufficient data to:
1. ~~Determine if any of the following limiting conditions exist:-~~
 - a. ~~The soil absorption rate determined by the requirements of this Article is more than 1.20 gallons per square foot per day;~~
 - b. ~~The soil absorption rate determined the requirements of this Article is less than 0.13 gallons per square foot per day;~~
 - c. ~~The vertical separation distance from the bottom of the lowest point of the disposal system to the seasonal high water table is less than the minimum vertical separation specified by R18-9-A312(E), or seasonal saturation at the surface occurs;~~
 - d. ~~The surface slope is greater than 15% at the intended location of the on-site wastewater treatment facility;~~
 - e. ~~Minimum setback distances are not within acceptable limits as specified in R18-9-A312(C);~~
 - f. ~~The vertical separation distance from the bottom of the lowest point of the disposal system to a subsurface condition that will cause surfacing of wastewater at the design flow rate or provide a direct conduit to the aquifer is less than the minimum vertical separation specified by R18-9-A312(E);~~
 - g. ~~Surface drainage characteristics at the intended location of the on-site wastewater treatment facility will adversely affect the ability of the facility to function properly; or~~
 - h. ~~The vertical separation distance from the bottom of the lowest point of the disposal system to a subsurface condition that will convey wastewater to a water of the state to cause or contribute to a violation of an Aquifer Water Quality Standard established under A.R.S. Title 49, Chapter 2, Article 2 is less than the minimum vertical separation specified under R18-9-A312(E).~~
 2. 1. Allow selection of an appropriate on-site. Select appropriate primary and reserve disposal areas for an on-site wastewater treatment facility for the site considering all surface and subsurface limiting conditions ~~that exist in subsections (C)(2) and (D)(2); and~~
 3. 2. Effectively locate, design, and install a properly operating on-site wastewater treatment the selected facility to serve the anticipated development at the site, whether or not limiting conditions exist.
- C. The site investigation shall include the determination of soil characteristics using one or more of the following methods: Surface characterization.
1. Surface characterization method. The investigator shall characterize the surface of the site where an on-site wastewater treatment facility is proposed for installation using one of the following methods:
 - 1-a. The “Standard Practice for Surface Site Characterization for On-site Septic Systems, D5879-95 (2003),” published by the American Society for Testing and Materials, (D 5879-95E1), approved December 10, 1995;. This material is incorporated by reference and does not include any later amendments or editions of the incorporated material. Copies of the incorporated material are available for inspection at the Arizona Department of Environ-

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mental Quality, 1110 W. Washington, Phoenix, AZ 85007 or may be obtained from the American Society for Testing and Materials International, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959; or

b. Another method of surface characterization that can, with accuracy and reliability, identify and delineate the surface limiting conditions specified in subsection (C)(2).

2. “Standard Practice for Subsurface Site Characterization of Test Pits for On-site Septic Systems,” published by the American Society for Testing and Materials, (D 5921-96E1), approved February 10, 1996;

3. “Standard Practice for Soil Investigation and Sampling by Auger Borings,” published by the American Society for Testing and Materials, (D 1452-80), reapproved 1995, if the depth to groundwater may be within the required minimum vertical separation from the bottom of the disposal field:

a. The information listed in subsections (C)(1), (C)(2) and (C)(3) is incorporated by reference and does not include any later amendments or editions of the incorporated matter.

b. Copies of the incorporated material are available for inspection at the Department of Environmental Quality and the Office of the Secretary of State, or may be obtained from the American Society for Testing and Materials, 100 Barr Harbor Drive, Conshohocken, PA 19428-2959.

4. Pereolation testing as specified in subsection (E);

5. Seepage pit performance testing as specified in subsection (F);

6. Other methods of soil evaluation, as approved by the Department, that ensure compliance with Aquifer Water Quality Standards through proper system location, selection, design, installation, and operation.

2. Surface limiting conditions. The investigator shall determine whether, and if so, where any of the following surface limiting conditions exist:

a. The surface slope is greater than 15 percent at the intended location of the on-site wastewater treatment facility;

b. Minimum setback distances are not within the limits specified in R18-9-A312(C);

c. Surface drainage characteristics at the intended location of the on-site wastewater treatment facility will adversely affect the ability of the facility to function properly;

d. A 100-year flood hazard zone, as indicated on the applicable flood insurance rate map, is located within the property on which the on-site wastewater treatment facility will be installed;

e. An outcropping of rock that cannot be excavated exists in the intended location of the on-site wastewater treatment facility or will impair the function of soil receiving the discharge; and

f. Fill material deposits exist in the intended location of the on-site wastewater treatment facility.

D. Applicability of soil characterization methods.

1. For a seepage pit constructed under the 4.02 General Permit, the investigator shall test seepage pit performance using the procedure specified in subsection (F).

2. Soil characterization using one or more of the American Society for Testing and Materials methods specified in subsections (C)(1), (C)(2), and (C)(3) shall be used if one or more of the following site conditions exists:

a. The natural surface slope at the intended location of the on-site wastewater treatment facility, including the disposal field reserve area, is greater than 15%;

b. Bedrock or similar consolidated rock formation that cannot be excavated with a shovel outcrops from the lot or is known to exist less than 10 feet below the land surface;

c. The native soil at the surface or encountered in a boring, trench, or hole consists of more than 35% rock fragments greater than three inches across;

d. The seasonal high water table is known to occur within 10 feet of the natural land surface or seasonal saturation at the natural land surface occurs as indicated by soil mottling, vegetation adapted to near surface saturated soils, nearby springs, seeps, or surface water bodies, or well records that indicate high water table conditions beneath the intended location; or

e. A pereolation test yields results outside the limits specified in subsection (B)(1)(a) and (B)(1)(b).

3. Pereolation testing as specified in subsection (C)(4) or another method of soil evaluation approved by the Department under subsection (C)(6) may be used to augment soil characterization specified in subsection (D)(2) if useful to locate or design an on-site wastewater treatment facility.

4. Pereolation testing as specified in subsection (C)(4) or another method of soil evaluation approved by the Department under subsection (C)(6) shall be used as the sole method of soil characterization if a soil characterization method specified in subsection (D)(2) is not required.

5. Unless testing under subsection (C)(5) is required, the Department shall accept a soil characterization method specified in subsection (D)(2) as the sole soil characterization method.

D. Subsurface characterization.

1. Subsurface characterization method. The investigator shall characterize the subsurface of the site where an on-site wastewater treatment facility is proposed for installation using one or more of the following methods:

a. The following ASTM standard practices, which are incorporated by reference and do not include any later amendments or editions of the incorporated material. Copies of the incorporated material are available for inspection at the Arizona Department of Environmental Quality, 1110 W. Washington, Phoenix, AZ 85007 or

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may be obtained from the American Society for Testing and Materials International, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959:

- i. “Standard Practice for Subsurface Site Characterization of Test Pits for On-site Septic Systems, D5921-96(2003)e1 (2003),” published by the American Society for Testing and Materials; and
 - ii. “Standard Practice for Soil Investigation and Sampling by Auger Borings, D1452-80 (2000),” published by the American Society for Testing and Materials;
 - b. Percolation testing as specified in subsection (F);
 - c. Seepage pit performance testing as specified in subsection (G); or
 - d. Another method of subsurface characterization, approved by the Department, that ensures compliance with water quality standards through proper system location, selection, design, installation, and operation.
 2. Subsurface limiting conditions. The investigator shall determine whether any of the following limiting conditions exist in the primary and reserve areas of the on-site wastewater treatment facility within a minimum of 12 feet of the land surface or to an impervious soil or rock layer if encountered at a shallower depth:
 - a. The soil absorption rate determined under R18-9-A312(D)(2) is:
 - i. More than 1.20 gallons per day per square foot, or
 - ii. Less than 0.20 gallons per day per square foot;
 - b. The vertical separation distance from the bottom of the lowest point of the disposal works to the seasonal high water table is less than the minimum vertical separation specified in R18-9-A312(E)(1);
 - c. Seasonal saturation occurs within surface soils that could affect the performance of the on-site wastewater treatment facility;
 - d. One of the following subsurface conditions that may cause or contribute to the surfacing of wastewater:
 - i. An impervious soil or rock layer;
 - ii. A zone of saturation that substantially limits downward percolation from the disposal works;
 - iii. Soil with more than 50 percent rock fragments;
 - e. One of the following subsurface conditions that promotes accelerated downward movement of insufficiently treated wastewater:
 - i. Fractures or joints in rock that are open, continuous, or interconnected;
 - ii. Karst voids or channels; or
 - iii. Highly permeable materials such as deposits of cobbles or boulders; or
 - f. A subsurface condition that may convey wastewater to a water of the state and cause or contribute to an exceedance of a water quality standard established in 18 A.A.C. 11, Articles 1 and 4.
 3. Applicability of subsurface characterization methods. The investigator shall:
 - a. For a seepage pit constructed under R18-9-E302, test seepage pit performance using the procedure specified in subsection (G);
 - b. For an on-site wastewater treatment facility other than a seepage pit, characterize soil by using one or more of the ASTM methods specified in subsection (D)(1)(a) if any of the following site conditions exists:
 - i. The natural surface slope at the intended location of the on-site wastewater treatment facility is greater than 15 percent;
 - ii. Bedrock or similar consolidated rock formation that cannot be excavated with a shovel outcrops on the property or occurs less than 12 feet below the land surface;
 - iii. The native soil at the surface or encountered in a boring, trench, or hole consists of more than 35 percent rock fragments;
 - iv. The seasonal high water table occurs within 12 feet of the natural land surface as encountered in trenches or borings, or evidenced by well records or hydrologic reports;
 - v. Seasonal saturation at the natural land surface occurs as indicated by soil mottling, vegetation adapted to near-surface saturated soils, or springs, seeps, or surface water near enough to the intended location of the on-site wastewater treatment facility to have a connection with potential seasonal saturation at the land surface; or
 - vi. A percolation test yields results outside the limits specified in subsection (D)(2)(a) and (b).
 - c. Percolation testing. The investigator may perform percolation testing as specified in subsection (F):
 - i. To augment another method of subsurface characterization if useful to locate or design an on-site wastewater treatment facility, or
 - ii. As the sole method of subsurface characterization if a subsurface characterization by an ASTM method is not required under subsection (D)(3)(b).
 - E. If an ASTM method is used for subsurface characterization, the investigator shall conduct subsurface characterization tests at the site to provide adequate, credible, and representative information to ensure proper location, selection, design, and installation of the on-site wastewater treatment facility. The investigator shall:
 1. Select at least two test locations in the primary area and one test location in the reserve area to conduct the tests;
 2. Perform the characterization at each test location at appropriate depths to:

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- a. Establish the wastewater absorption capacity of the soil under R18-9-A312(D), and
- b. Aid in determining that a sufficient zone of unsaturated flow is provided below the disposal works to achieve necessary wastewater treatment; and
3. Submit with the site investigation report:
 - a. A log of soil formations for each test location with information on soil type, texture, and classification; percent-age of rock; structure; consistence; and mottles;
 - b. A determination of depth to groundwater below the land surface by test trenches or borings, published ground-water data, subdivision reports, or relevant well data; and
 - c. A determination of the water absorption characteristics of the soil, under R18-9-A312(D)(2)(b), sufficient to allow location and design of the on-site wastewater treatment facility.

E-F. Percolation testing method for subsurface characterization.

1. ~~Planning and Preparation~~ preparation. The investigator shall:
 - a. ~~Select a sufficient number of sites at least two locations in the primary area and at least one location in the reserve area for percolation testing, to provide adequate and credible information to ensure proper location, selection, design, and installation of a properly working on-site wastewater treatment facility and reserve drain-field. At least two sites shall be selected, one in the primary disposal area and one in the reserve disposal area;~~
 - b. Perform percolation testing at each site location at appropriate depths within intervals in the soil profile sufficient to:
 - i. ~~establish~~ Establish the wastewater absorption capability of the soil ~~in the primary and reserve disposal areas under R18-9-A312(D), and~~
 - ii. ~~to help determine the vertical separation necessary to achieve effective wastewater treatment in the zone of unsaturated flow below the drainfield system~~ Aid in determining that a sufficient zone of unsaturated flow is provided below the disposal works to achieve necessary wastewater treatment. The investigator shall perform percolation tests at multiple depths if there is an indication of an obvious change in soil characteristics that appreciably affect the location, selection, design, installation, or disposal performance of the on-site wastewater treatment facility. The bottom of the percolation test hole is the reference elevation and depth for recordkeeping;
 - c. Excavate percolation test holes in undisturbed soil at least 12 inches deep with ~~a cross-section dimensions~~ square by 12 inches, if square, or a diameter of 15 inches, if round. The investigator shall not alter the structure of the soil during the excavation;
 - d. Place percolation test holes away from site or soil features that yield unrepresentative or misleading data pertaining to the location, selection, design, installation, or performance of the on-site wastewater treatment facility;
 - e. Scarify smeared soil surfaces within the percolation test holes and remove any loosened materials from the bottom of the hole; and
 - f. Use buckets with holes in the sides to support the sidewalls of the percolation test hole, if necessary. ~~Any The investigator shall fill any~~ voids between the walls of the hole and the bucket ~~shall be filled~~ with pea gravel to reduce the impact of the enlarged hole.
2. Presoaking procedure. The investigator shall:
 - a. Fill the percolation test hole with clean water to a depth of 12 inches above the bottom of the hole ~~with clean water;~~
 - b. Observe the decline of the water level in the hole and record time in minutes for the water to completely drain away;
 - c. Repeat the steps specified in subsection ~~(E)(2)(a) and (E)(2)(b)~~ (F)(2)(a) and (b) if the water drains away in less than 60 minutes.
 - i. ~~If the water drains away the second time in less than 60 minutes, the inspector investigator shall repeat the steps specified in subsections (E)(2)(a) and (E)(2)(b) again (F)(2)(a) and (b).~~
 - ii. ~~If the water drains away again a third time in less than 60 minutes, the investigator shall perform the percolation test shall be performed by~~ following subsection ~~(E)(3) (F)(3); and~~
 - d. Add clean water to the hole after 60 minutes and maintain the water at a minimum depth of ~~nine~~ 2 inches for at least four more hours if it takes 60 minutes or longer for the water drains away in 60 minutes or greater to drain away. The ~~inspector investigator~~ shall protect the hole from precipitation and runoff, and perform the percolation test specified in subsection ~~(E)(3) (F)(3) shall be performed~~ between 16 and 24 hours after presoaking.
3. Conducting the test. The investigator shall:
 - a. Conduct the percolation test before soil hydraulic conditions established by the presoaking procedure substantially change. ~~Any The investigator shall remove~~ loose materials in the percolation test hole ~~shall be removed~~ to ensure that the specified dimensions of the hole are maintained and the infiltration surfaces are undisturbed native soil;
 - b. Fill the test hole to a depth of ~~six~~ 6 inches above the bottom with clean water;
 - c. Observe the decline of the water level in the ~~percolation~~ test hole ~~and determine~~ and record the time in minutes

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- for the water level to fall exactly ~~one~~ 1 inch from a fixed reference point. The investigator shall:
- i. ~~immediately~~ Immediately refill the hole with clean water to a depth of ~~six~~ 6 inches above the bottom; and shall determine and record the time in minutes for the water level to fall exactly ~~one~~ 1 inch;
 - ii. The Refill the hole again shall be immediately refilled with clean water to a depth of ~~six~~ 6 inches above the bottom and determine and record the time in minutes for the water to fall exactly ~~one~~ 1 inch ~~shall be determined and recorded, and~~
 - iii. ~~The investigator shall ensure~~ Ensure that the method for measuring water level depth is accurate and does not significantly affect the percolation rate of the test hole;
- d. ~~Use the stabilized percolation rate as the basis for design if, when three consecutive measurements vary by no more than 10%. If the percolation rate stabilizes for three consecutive measurements by varying no more than 10 percent, use the highest percolation rate value of the three measurements. If three consecutive measurements indicate that the percolation rate results are not stabilizing or the percolation rate is between 60 and 120 minutes per inch, the investigator shall use an alternate method based on a graphical solution of the test data shall be used to approximate the stabilized percolation rate; and~~
- e. Record the percolation rate results in minutes per inch. ~~The submittal of percolation test results to the Department shall include; and~~
- f. Submit the following information with the site investigation report:
- i. a A log of the soil formations encountered for all percolation tests including information on texture, structure, consistence, percentage of rock fragments, and mottles, if present; the percent of rock fragments; the texture, structure, consistence, mottles, and depth to groundwater;
 - ii. ~~whether~~ Whether and which test hole was reinforced with a bucket; ~~and~~
 - iii. The locations, and depths, of and bottom elevations of the percolation test holes on the site investigation map;
 - iv. A determination of depth to groundwater below the land surface by test trenches or borings, published groundwater data, subdivision reports, or relevant well data; and
 - v. A determination of the water absorption characteristics of the soil, under R18-9-A312(D)(2)(a), sufficient to allow location and design of the on-site wastewater treatment facility.

~~F-G~~ Seepage pit performance testing method for subsurface characterization. ~~At~~ The investigator shall test seepage pits described in R18-9-E302 as follows:

1. Planning and Preparation. The investigator shall:
 - a. Identify ~~primary and reserve~~ the disposal areas ~~areas~~ at the site. ~~A and drill a test hole at least 18 inches in diameter shall be drilled in the primary disposal area to the depth of the bottom of the proposed seepage pit, at least 30 feet deep; and~~
 - b. Scarify soil surfaces within the test hole and remove loosened materials from the bottom of the hole.
2. Presoaking procedure. The investigator shall:
 - a. Fill the bottom ~~six~~ 6 inches of the test hole with gravel, if necessary, to prevent scouring;
 - b. Fill the test hole with clean water up to ~~three~~ 3 feet below the land surface;
 - c. Observe the decline of the water level in the hole and determine the time in hours and minutes for the water to completely drain away;
 - d. Repeat the procedure if the water drains away in less than four hours; If the water drains away the second time in less than four hours, ~~then the investigator shall conduct~~ the seepage pit performance test shall be conducted by following subsection ~~(F)(3)~~ (G)(3);
 - e. Add water to the hole and maintain the water at a depth that leaves at least the top ~~three~~ 3 feet of hole exposed to air for at least four more hours if the water drains away in four or more hours; ~~and~~
 - f. Not remove the water from the hole before the seepage pit performance test if there is standing water in the hole after at least 16 hours of presoaking.
3. Conducting the test. The investigator shall:
 - a. Fill the test hole with clean water up to ~~three~~ 3 feet below land surface;
 - b. Observe the decline of the water level in the hole and determine and record the vertical distance to the water level from a fixed reference point every 10 minutes; The investigator shall ensure that the method for measuring water level depth is accurate and does not significantly affect the rate of fall of the water level in the test hole;
 - c. Measure the decline of the water level continually until three consecutive 10-minute measurements indicate that the infiltration rates are within 10% percent. If measurements indicate that infiltration is not approaching a steady rate or if the rate is close to a numerical limit specified in ~~R18-9-A312(E)~~ R18-9-A312(E)(1), the investigator shall use an alternate method based on a graphical solution of the test data ~~shall be used~~ to approximate the final stabilized infiltration rate;
 - d. Percolation test rate. Calculate the stabilized infiltration rate for a seepage pit determined by the test hole procedure specified in subsection (G)(1)(a) using the formula $P = (15 / DS) \times IS$ to determine an equivalent percolation test rate. Once "P" is determined, the investigator shall use R18-9-A312(D)(2)(a) to establish the design SAR for

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wastewater treated under R18-9-E302 and to calculate the required minimum sidewall area for the seepage pit using the equation specified in R18-9-E302(C)(5)(k).

i. "P" is the percolation test rate (minutes per inch) tabulated in the first column of the table in R18-9-A312(D)(2)(a).

ii. "DS" is the diameter of the seepage pit test hole in inches, and

iii. "IS" is the seepage pit stabilized infiltration rate (minutes per inch) determined by the procedure specified in R18-9-A310(F)(3)(c).

d-e. Submit the seepage pit performance test results to the Department, including following information with the site investigation report:

i. ~~Data~~ The results of the seepage pit performance testing including data, calculations, and findings on a form provided by the Department;

ii. The log of the test hole indicating lithologic characteristics and points of change; and

iii. The location of the test hole on the site investigation map; and

iv. A determination of depth to groundwater below the land surface by borings, published groundwater data, subdivision reports, or relevant well data.

e-f. Fill the test hole so that groundwater quality and public safety are not compromised if the seepage pit is drilled elsewhere or if a seepage pit cannot be sited at the location because of unfavorable test results.

G. Soil evaluation procedures. If one or more of the soil evaluation procedures specified by subsection (C)(1), (C)(2), or (C)(3) are used, the following rules apply and the investigator shall:

1. Ensure that the number of test locations selected for soil evaluation are sufficient to provide adequate and credible information to ensure proper location, selection, design, and installation of a properly working on-site wastewater treatment facility and reserve drainfield. The investigator shall select at least two test locations, one in the primary disposal area and one in the reserve disposal area;

2. Perform a soil evaluation at each test location at appropriate depths within the soil profile to establish the capability of the soil in the primary and reserve disposal areas to absorb wastewater, and determine the vertical separation necessary to achieve effective wastewater treatment in the zone of unsaturated flow below the drainfield system;

3. Not conduct soil evaluations near site or soil features that yield unrepresentative or misleading data relating to the location, selection, design, installation, or performance of the on-site wastewater treatment facility;

4. Include the following in a soil evaluation:

a. A log of soil formations for each test location with information on soil type, texture, and classification; percent age of rock; structure; consistence; and mottles;

b. A determination of depth to ground water below the land surface by test holes, published groundwater data, subdivision reports, or relevant well data; and

c. A determination of the water absorption characteristics of the soil, under R18-9-A312(D)(2)(b), sufficient to allow location and design of the on-site wastewater treatment facility.

H. Qualifications. An investigator shall not perform a site investigation under this Section unless the investigator has knowledge and competence in the subject area and is licensed in good standing or otherwise qualified in one of the following categories:

1. Arizona-registered professional engineer,

2. Arizona-registered geologist,

3. Arizona-registered sanitarian,

4. A certificate of training from a course recognized by the Department as sufficiently covering the information specified in this Section, or

5. Qualifies under another category designated in writing by the Department.

R18-9-A311. Facility Selection ~~For~~ for Type 4 On-site Wastewater Treatment Facilities

A. A person shall select, design, and install an on-site wastewater treatment facility that is appropriate for the site's geographic location, setback limitations, slope, topography, drainage and soil characteristics, wastewater infiltration capability, depth to the seasonal high water table, and any surface or subsurface limiting condition.

1. A person may use on-site treatment and disposal technologies covered by a Type 4 General Permit alone or in combination with another Type 4 General Permit to overcome site limitations.

2. An applicant may submit a single Notice of Intent to Discharge for an on-site wastewater treatment facility consisting of components or technologies covered by multiple general permits if the information submittal requirements of all the general permits are met.

3. The Director shall issue a single Construction Authorization under R18-9-A301(D)(1) and a single Discharge Authorization under R18-9-A301(D)(2) for an on-site wastewater treatment facility that consists of components or technologies covered by multiple general permits.

A-B. A person may seeking to install an on-site wastewater treatment facility a septic tank and disposal works system described in R18-9-E302 as the sole method of wastewater treatment and disposal at a site may install the facility if the site investigation conducted under R18-9-A310 indicates that ~~none of the~~ no limiting condition identified under R18-9-A310(C) or

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~~R18-9-A310(D) exists~~ site conditions described in R18-9-A310(B) exist at the site, except as provided in subsection (C).

1. A ~~person may install a~~ seepage pit ~~may be installed~~ only in valley-fill sediments in a basin-and-range alluvial basin and only if the seepage pit performance test results meet the criteria specified in R18-9-A312(E).
2. The ~~person shall specify in the Notice of Intent to Discharge shall specify that none of the no~~ limiting site conditions described in ~~R18-9-A310(B)~~ R18-9-A310(C) and (D) were identified at the site.
- B.** ~~The on-site wastewater treatment facility for the site shall be selected, designed, and installed to overcome the identified site limitations:~~
 1. ~~On-site treatment and disposal systems and technologies covered by Type 4 General Permits may be used alone or in combination to overcome the site limitations.~~
 2. ~~An applicant may submit a single Notice of Intent to Discharge for a system consisting of components or technologies covered by multiple general permits if the information submittal requirements of all the general permits are met.~~
 3. ~~The Director shall, except in unusual circumstances, issue a single Provisional Verification of General Permit Conformance established under R18-9-A301(D)(2) for the on-site wastewater treatment facility.~~
- C.** ~~A person seeking to install an on-site wastewater treatment facility shall select a facility that is appropriate for the site's geographic location, setback limitations, slope, topography, soil classification, wastewater infiltration capability, and depth to seasonally high groundwater table or other limiting subsurface condition. An on-site wastewater treatment facility described in R18-9-E302 shall not be used by itself at a site where limiting site conditions are identified, except the Department shall review and may approve a facility based on the procedures and conditions under R18-9-A312(G) if no more than one of the limiting site conditions specified by R18-9-A310(B)(1)(a), (B)(1)(b) or (B)(1)(d) exists.~~
- C.** If any surface or subsurface limiting condition is identified in the site investigation report, an applicant may propose installation of a septic tank and disposal works system described in R18-9-E302 only if:
 1. The applicant submits information under R18-9-A312(G) that describes:
 - a. How the design of the septic tank and disposal works system specified in R18-9-E302 was modified to overcome limiting conditions;
 - b. How the modified design meets the criteria of R18-9-A312(G)(3); and
 - c. A site-specific SAR under R18-9-A312(D)(2)(a) or (b), as applicable; and
 2. None of the following surface or subsurface limiting conditions are identified at the site:
 - a. An outcropping of rock that cannot be excavated or will impair the function of soil receiving the discharge exists in the intended location of the on-site wastewater treatment facility, as described in R18-9-A310(C)(2)(e);
 - b. The vertical separation distance from the bottom of the lowest point of the disposal works to the seasonal high water table is less than the minimum vertical separation distance, as described in R18-9-A310(D)(2)(c); or
 - c. A subsurface condition that promotes accelerated downward movement of insufficiently treated wastewater as described in R18-9-A310(D)(2)(e).
- D.** ~~If an on-site wastewater treatment facility, described in R18-9-E302, is suitable for a site and no limiting site conditions prevent its proper installation and operation, the Department shall not approve a system other than that described in R18-9-E302, unless the applicant supplies a statement with the Notice of Intent to Discharge justifying the use of a system not authorized under R18-9-E302.~~
- D.** If a site can accommodate a septic tank and disposal works system described in R18-9-E302, the applicant shall not install a treatment works or disposal works described in R18-9-E303 through R18-9-E322 unless the applicant submits a statement to the Department with the Notice of Intent to Discharge acknowledging the following:
 1. The applicant is aware that although a septic tank and disposal works system described in R18-9-E302 is appropriate for the site, the applicant desires to install a treatment works or disposal works authorized under R18-9-E303 through R18-9-E322; and
 2. The applicant is aware that a treatment works or disposal works authorized under R18-9-E303 through R18-9-E322 may result in higher capital, operation, and maintenance costs than a septic tank and disposal works system described in R18-9-E302.

R18-9-A312. Facility Design ~~For~~ for Type 4 On-site Wastewater Treatment Facilities

- A.** General design requirements. ~~A~~ An applicant shall ensure that the person designing the an on-site wastewater treatment facility ~~shall:~~
 1. ~~Sign~~ Signs the design documents submitted as part of the Notice of Intent to Discharge ~~or subsequently to obtain a Provisional Verification of General Permit Conformance~~ Construction Authorization, including plans, specifications, drawings, reports, and calculations; and
 2. ~~Locate and design~~ Locates and designs the on-site wastewater treatment facility project using good design ~~judgment~~ judgment and ~~rely~~ relies on appropriate design methods and calculations.
- B.** Design considerations and flow determination. ~~A~~ An applicant shall ensure that the person designing the on-site wastewater treatment facility ~~shall:~~
 1. Design the facility to satisfy a 20-year operational life;
 2. Design the facility based on ~~design flow~~ the provisions of:
 - a. ~~General Permits 4.02 through 4.22 apply only to~~ One or more of the general permits in R18-9-E302 through

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- R18-9-E322 for facilities with a design flow of less than 3000 gallons per day; and
- b. ~~General Permit 4.23 applies only to~~ R18-9-E323 for facilities with a design flow of 3000 gallons per day to less than 24,000 gallons per day;
3. ~~Use Table 1, Unit Daily Design Flows, to determine design flow;~~ Design the facility based on the facility's design flow and wastewater characteristics as specified in R18-9-A309(B)(3);
4. ~~Apply the following design requirements to~~ For on-site wastewater treatment facilities permitted under R18-9-E303 through R18-9-E323, apply the following design requirements, as applicable:
- ~~Include the power source and power components in construction drawings if electricity or another type of power is necessary for facility operation;~~
 - ~~Perform a linear loading rate analysis for subsurface wastewater flow if the site investigation indicates that an impermeable layer or seasonal high water table exists less than 10 feet below the bottom of the disposal works. If a hydraulic analysis is required under subsection (E), perform the analysis based on the location and dimensions of the bottom and sidewall surfaces of the disposal works that are identified in the design documentation;~~
 - ~~Design components, piping, ports, seals, and appurtenances to withstand installation loads, internal and external operational loads, and buoyant forces. Ports shall be designed for firmness of position resistance against movement, and cap or cover openings shall be capped or covered for protection from damage and entry by rodents, mosquitoes, flies, or other organisms capable of transporting a disease-causing organism;~~
 - ~~Design tanks, liners, ports, seals, piping to and within the facility, and appurtenances for watertightness under all operational conditions;~~
 - ~~Provide adequate storage capacity above high operating level to:~~
 - ~~Accommodate a 24-hour power or pump outage, and~~
 - ~~Contain wastewater that is incompletely treated or cannot be released by the disposal works to the native soil;~~
 - ~~If a fixed media process is used, include provide in the construction drawings the media material, installation specification, bed media configuration, and wastewater loading rate of the media at the daily design flow in construction drawings; and~~
 - ~~Provide a fail-safe wastewater control mechanism or operational process, if required by the general permit, for total containment of incompletely treated wastewater; to prevent discharge of inadequately treated wastewater; and~~
 - Reference design. If using a reference design on file with the Department, indicate the reference design within the information submitted with the Notice of Intent to Discharge.
- C. Setbacks. The following setbacks apply unless the Department:
- Specifies alternative setbacks under Article 3, Part E of this Chapter;
 - ~~has authorized~~ Approves a different setback under the procedure specified in subsection (G); ~~or has established~~
 - Establishes a more stringent setback on a site- or area-specific basis to ensure compliance with water quality standards.

Feature of Potential Impact	Setback Distance (feet)	
	Septic Tank	Disposal Trench, Bed, or Seepage Pit
Building (1)	10	10
Property line shared with adjoining land not served by a common drinking water system or an existing well (2)	50	50
All other property lines	5	5
Water supply well (public or private)	100	100
Perennial or intermittent stream (3)	100	100
Lake or reservoir (4)	100	100
Drinking water intake from a surface water source (includes an open water body, downgrade spring or a well tapping streamside saturated alluvium)	200	200

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Drainage easement or wash with drainage area more than five acres (5)	50	50
Water main or branch water line	10	10
Domestic service water line (6)	5	5
Downslope cut banks and culvert or roadway ditches (7)	15	15
Driveway (8)	5	5
Swimming pool (9)	5	5
Easement (except drainage easement)	5	5

Notes:

- (1) Includes porches, decks, and steps (covered or uncovered), breezeways, roofed patios, carports, covered walks and driveways, and similar structures and appurtenances.
- (2) A common drinking water system is a system that currently serves or is under legal obligation to serve the property and may include a drinking water utility, a well sharing agreement, or other viable water supply agreement. A setback may be reduced to a minimum of five feet from the property line if:
 - a. The owners of any affected undeveloped adjacent properties agree by an appropriate written document to limit the location of any new well on their property to at least 100 feet from the proposed septic tank and primary and reserve disposal field areas; and
 - b. The arrangements and documentation are approved by the Department.
- (3) Measured from the limit of peak streamflow from a 10-year, 24-hour rainfall event.
- (4) Measured from the high water line from a 10-year, 24-hour rainfall event at the lake or reservoir.
- (5) Measured from the nearest edge of the defined natural channel bank or drainage easement whichever is less. A setback may be reduced to 25 feet if natural or constructed erosion protection is approved by the appropriate flood plain administrator.
- (6) The water line separation from sewer lines shall be as follows:
 - a. A water line crossing a sewer line at an angle of 45 to 90 degrees shall be one foot above the sewer line.
 - b. A water line crossing a sewer line at an angle of less than 45 degrees is not allowed.
 - c. A water line that is one to three feet from a sewer line but does not cross the sewer line shall be one foot above the sewer line and may be on a bench in the same trench or in a separate trench.
 - d. A water line that is less than one foot from a sewer line but does not cross the sewer line is not allowed.
- (7) Measured to the top of the cut bank or ditch or to the nearest sidewall of the culvert. The setback to a disposal trench, bed, or seepage pit is 15 feet or four times the elevation difference between the finished grade of the disposal trench, bed, or seepage pit and the elevation at the cut bank bottom, ditch bottom, or culvert invert, whichever is greater, up to 50 feet.
- (8) Measured to the nearest edge of septic tank excavation. A properly reinforced septic tank and cover may be placed at any location relative to a driveway if access openings, risers, and covers carry the design load and are protected from inflow.
- (9) A setback may be increased due to soil loading and stability concerns.

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<u>Features Requiring Setbacks</u>	<u>Setback For An On-Site Wastewater Treatment Facility, Including Reserve Area (In Feet)</u>	<u>Special Provisions</u>
1. <u>Building</u>	<u>10</u>	<u>Includes porches, decks, and steps (covered or uncovered), breezeways, roofed patios, carports, covered walks, and similar structures and appurtenances.</u>
2. <u>Property line shared with any adjoining lot or parcel not served by a common drinking water system* or an existing drinking water well</u>	<u>50</u>	<u>A person may reduce the setback to a minimum of 5 feet from the property line if:</u> a. <u>The owners of any affected undeveloped adjacent properties agree, as evidenced by an appropriately recorded document, to limit the location of any new well on their property to at least 100 feet from the proposed treatment works and primary and reserve disposal works; and</u> b. <u>The arrangements and documentation are approved by the Department.</u>
3. <u>All other property lines</u>	<u>5</u>	<u>None</u>
4. <u>Public or private water supply well.</u>	<u>100</u>	<u>None</u>
5. <u>Perennial or intermittent stream</u>	<u>100</u>	<u>Measured horizontally from the high water line of the peak streamflow from a 10-year, 24-hour rainfall event.</u>
6. <u>Lake, reservoir, or canal</u>	<u>100</u>	<u>Measured horizontally from the high water line from a 10-year, 24-hour rainfall event at the lake or reservoir.</u>
7. <u>Drinking water intake from a surface water source (includes an open water body, downslope spring or a well tapping streamside saturated alluvium)</u>	<u>200</u>	<u>Measured horizontally from the on-site wastewater treatment facility to the structure or mechanism for withdrawing raw water such as a pipe inlet, grate, pump, intake or diversion box, spring box, well, or similar structure.</u>
8. <u>Wash or drainage easement with a drainage area of more than 20 acres</u>	<u>50</u>	<u>Measured horizontally from the nearest edge of the defined natural channel bank or drainage easement boundary. A person may reduce the setback to 25 feet if natural or constructed erosion protection is approved by the appropriate flood plain administrator.</u>
9. <u>Water main or branch water line</u>	<u>10</u>	<u>None</u>
10. <u>Domestic service water line</u>	<u>5</u>	<u>Measured horizontally between the water line and the wastewater pipe, except that the following are allowed:</u> a. <u>A water line may cross above a wastewater pipe if the crossing angle is between 45 and 90 degrees and the vertical separation distance is 1 foot or more.</u> b. <u>A water line may parallel a wastewater pipe with a horizontal separation distance of 1 foot to 5 feet if the bottom of the water line is 1 foot or more above the top of the wastewater pipe and is in a separate trench or on a bench in the same trench.</u>

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11. <u>Downslopes or cut banks greater than 15 percent, culverts, and ditches from:</u> a. <u>Treatment works components</u> b. <u>Trench, bed, chamber technology, or gravel-less trench with:</u> i. <u>No limiting subsurface condition specified in R18-9-A310(D)(2).</u> ii. <u>A limiting subsurface condition.</u> c. <u>Subsurface drip lines.</u>	10	<u>Measured horizontally from the bottom of the treatment works component to the closest point of daylighting on the surface.</u>
	20	<u>Measured horizontally from the bottom of the lowest point of the disposal pipe or drip lines, as applicable, to the closest point of daylighting on the surface.</u>
	50	
	3	<u>Measured horizontally from the bottom of the lowest point of the disposal pipe or drip lines, as applicable, to the closest point of daylighting on the surface.</u>
12. <u>Driveway</u>	5	<u>Measured horizontally to the nearest edge of an on-site wastewater treatment facility excavation. A person may place a properly reinforced and protected wastewater treatment facility, except for disposal works, at any location relative to a driveway if access openings, risers, and covers carry the design load and are protected from inflow.</u>
13. <u>Swimming pool excavation</u>	5	<u>Except if soil loading or stability concerns indicate the need for a greater separation distance.</u>
14. <u>Easement (except drainage easement)</u>	5	<u>None</u>
15. <u>Earth fissures</u>	100	<u>None</u>

* A “common drinking water system” means a system that currently serves or is under legal obligation to serve the property and may include a drinking water utility, a well-sharing agreement, or other viable water supply agreement.

D. Soil absorption rate (SAR) and disposal field works sizing.

1. An applicant shall determine the soil absorption rate by dividing the design flow by the applicable soil absorption rate. If soil characterization and percolation test methods yield different SAR values or if multiple applications of the same approach yield different values, the designer of the disposal field works shall use the most conservative value unless a less conservative value lowest SAR value unless a higher SAR value is proposed and justified to the Department’s satisfaction in the Notice of Intent to Discharge.
2. The maximum SAR used to calculate disposal field works size for systems described in R18-9-E302 is as follows:
 - a. The SAR by percolation testing as described in R18-9-A310(E)(3) R18-9-A310(F) for shallow and deep disposal fields is determined from the results of percolation tests as follows:

Percolation Rate from Percolation Test (minutes per inch)	SAR, Shallow Trench, Disposal Field Chamber, and Pit (gal/day/ft²)	SAR, Deep Bed Disposal Field (gal/day/ft²)
Less than 1.00	See Note <u>A site-specific SAR is required</u>	See Note <u>A site-specific SAR is required</u>
1.00 to less than 3.00	1.20	0.93

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3.00	1.10	0.73
4.00	1.00	0.67
5.00	0.90	0.60
7.00	0.75	0.50
10.0	0.63	0.42
15.0	0.50	0.33
20.0	0.44	0.29
25.0	0.40	0.27
30.0	0.36	0.24
35.0	0.33	0.22
40.0	0.31	0.21
45.0	0.29	0.20
50.0	0.28	0.19
55.0	0.27	0.18
55.0+ to 60.0	0.25	0.17
60.0+ to 120	0.20	0.13
Greater than 120	<u>See Note</u> <u>A site-specific SAR is required</u>	<u>See Note</u> <u>A site-specific SAR is required</u>

Note: A disposal field described in R18-9-E302 is not allowed unless approved by the Department under R18-9-A311(C).

- b. The ~~maximum SAR for shallow and deep disposal fields~~ using the soil evaluation method described in ~~R18-9-A310(G)~~ R18-9-A310(E) is determined by answering the questions in the following table. The questions are read in sequence starting with "A." The first "yes" answer determines the ~~maximum SAR used to calculate disposal field size for systems described in R18-9-E302.~~

Sequence of Soil Characteristics Questions	SAR, <u>Trench, Chamber, and Pit</u> Shallow Disposal Field System (gallons per day per square foot) gal/day/ft²	SAR, <u>Bed</u> Deep Disposal Field System (gallons per day per square foot) gal/day/ft²
A. Is the horizon gravelly coarse sand or coarser?	<u>See Note</u> <u>A site-specific SAR is required</u>	<u>See Note</u> <u>A site-specific SAR is required</u>
B. Is the structure of the horizon moderate or strongly platy?	<u>See Note</u> <u>A site-specific SAR is required</u>	<u>See Note</u> <u>A site-specific SAR is required</u>
C. Is the texture of the horizon sandy clay loam, clay loam, silty clay loam, or finer and the soil structure weak platy?	<u>See Note</u> <u>A site-specific SAR is required</u>	<u>See Note</u> <u>A site-specific SAR is required</u>
D. Is the moist consistency stronger than firm or any cemented class?	<u>See Note</u> <u>A site-specific SAR is required</u>	<u>See Note</u> <u>A site-specific SAR is required</u>
E. Is the texture sandy clay, clay, or silty clay of high clay content and the structure massive or weak?	<u>See Note</u> <u>A site-specific SAR is required</u>	<u>See Note</u> <u>A site-specific SAR is required</u>

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F. Is the texture sandy clay loam, clay loam, silty clay loam, or silty loam and the structure massive?	<u>See Note</u> <u>A site-specific SAR is required</u>	<u>See Note</u> <u>A site-specific SAR is required</u>
G. Is the texture of the horizon loam or sandy loam and the structure massive?	0.20	0.13
H. Is the texture sandy clay, clay, or silty clay of low clay content and the structure moderate or strong?	0.20	0.13
I. Is the texture sandy clay loam, clay loam, or silty clay loam and the structure weak?	0.20	0.13
J. Is the texture sandy clay loam, clay loam, or silty clay loam and the structure moderate or strong?	0.40	0.27
K. Is the texture sandy loam, loam, or silty loam and the structure weak?	0.40	0.27
L. Is the texture sandy loam, <u>loam</u> , or silt loam and the structure moderate or strong?	0.60	0.40
M. Is the texture fine sand, very fine sand, loamy fine sand, or loamy very fine sand?	0.40	0.27
N. Is the texture loamy sand or sand?	0.80	0.53
O. Is the texture coarse sand?	1.20	<u>See Note</u> <u>A site-specific SAR is required</u>

~~Note: A disposal field described in R18-9-E302 is not allowed, unless approved by the Department under R18-9-A311(C) and an applicable SAR is provided.~~

- e. ~~For subsections (D)(2)(a) and (D)(2)(b), a shallow disposal field has a maximum depth below finished grade of five feet or less and a deep disposal field has a depth below finished grade of more than five feet.~~
3. For an on-site wastewater treatment ~~facilities~~ facility described in a general permit other than R18-9-E302, the SAR is dependent on the ability of the facility to reduce the level of TSS and BOD₅ and is calculated using the following formula:

~~$$SAR_a = \left[\frac{6.15}{\sqrt[3]{TSS + BOD_5}} - 1.01 \right] SAR^{1.28} + 1 SAR$$~~

$$SAR_a = \left[\frac{11.39}{\sqrt[3]{TSS + BOD_5}} - 1.87 \right] SAR^{1.13} + 1 SAR$$

- a. "SAR_a" is the adjusted soil absorption rate for disposal ~~field works~~ design in gallons per day per square foot,
- b. "TSS" is the total suspended solids in wastewater delivered to the disposal ~~field works~~ in milligrams per liter,
- c. "BOD₅" is the five-day biochemical oxygen demand of wastewater delivered to the disposal ~~field works~~ in milligrams per liter, and
- d. "SAR" is the soil absorption rate for septic tank ~~wastewater effluent~~ determined by the ~~percolation test or soil evaluation procedure~~ subsurface characterization method described in R18-9-A310.
4. ~~A person designing the facility shall ensure that the on-site wastewater treatment facility has a reserve disposal field with an area equivalent to at least 100% of the original disposal field determined by subsections (D)(1) through (D)(3) to allow installation of a reserve field if the original disposal field cannot absorb all of the wastewater. A person shall not impair the usefulness of the reserve area by division of the property, construction of structures, or improvements on the property. An applicant shall ensure that the facility is designed so that the area of the intended installation is large enough to allow for construction of the facility and for future replacement or repair and is at least~~

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as large as the following:

- a. For a dwelling, a primary area for the disposal works sized according to subsection (D)(1) and a reserve area of 100 percent of the primary area, excluding the footprint of the treatment works. A reserve area is not required for a lot in a subdivision approved before 1974 if the lot conforms to its original approved configuration;
- b. For other than a dwelling, a primary area for the disposal works sized according to subsection (D)(1) and a reserve area of 100 percent of the primary area, excluding the footprint of the treatment works.

5. An applicant shall ensure that the subsurface disposal works is designed to achieve the design flow established in R18-9-A309(B)(3) through proper hydraulic function, including conditions of seasonally cold and wet weather.

E. Minimum vertical separation Vertical separation distances.

1. ~~The minimum~~ Minimum vertical separation ~~from the bottom of the lowest point of the disposal system to the top of the nearest limiting subsurface condition described in R18-9-A310 (B)(1)(e), (B)(1)(f), and (B)(1)(h) for on-site wastewater treatment facilities to the seasonal high water table for a disposal works described in R18-9-E302; receiving septic tank effluent. For a disposal works described in R18-9-E302 receiving septic tank effluent, the minimum vertical separation distance between the lowest point in the disposal works and the seasonal high water table is dependent on the soil absorption rate and is determined as follows:~~

MAXIMUM SOIL ABSORPTION RATE Soil Absorption Rate (gallons per day per square foot)			Minimum Vertical Separation <u>Minimum Vertical Separation Between The Bottom Of The Disposal Works And The Seasonal High Water Table</u> (feet)	
Shallow Disposal Field Trench and Chamber	Deep Disposal Field Bed	Seepage Pit	Shallow or Deep Disposal Field Trench, Chamber, and Bed	Seepage Pit
1.20+	0.93+	1.20+	Not allowed for septic tank effluent	Not Allowed
0.63+ to 1.20	0.42 to 0.93	0.63+ to 1.20	10	60
0.20 to 0.63	0.13 to 0.42	0.36 to 0.63	5	2560
Less than 0.20	Less than 0.13	Less than 0.36	Not allowed for septic tank effluent	Not Allowed

2. Minimum vertical separation to the seasonal high water table for treatment and disposal works described in R18-9-E303 through R18-9-E322. The allowable If the minimum vertical separation from the bottom of the constructed disposal field to the top of the nearest indicated limiting subsurface condition is dependent on the ability of the facility to reduce the level distance to the seasonal high water table for a disposal works receiving septic tank effluent specified in subsection (E)(1) is not met, the applicant shall comply with the following:

- a. Employ one or more technologies described in R18-9-E303 through R18-9-E322 to achieve a reduced concentration of harmful microorganisms, expressed as total coliform in colony forming units per 100 milliliters (cfu/100 ml) delivered to native soil below at the bottom of the disposal works, at least 95% of the time. A treatment works, disposal works, or a combination of these works that achieves a treatment level specified in the following table may be used to determine the corresponding minimum vertical separation: The applicant shall use the following table to select works that achieve a reduced total coliform concentration corresponding to the available vertical separation distance between the bottom of the disposal works and the seasonal high water table;

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Total Coliform Concentration, 95th Percentile, Delivered to Natural Soil by the Disposal System (Log₁₀ of coliform concentration in cfu per 100 milliliters)	Minimum Vertical Separation (feet)	
	For SAR*, 0.20 to 0.63	For SAR*, 0.63+ to 1.20
8**	5	10
7	4	8
6	3.5	7
5	3	6
4	2.5	5
3	2	4
2	1.5	3
1	1	2
0***	0	0

<u>Available Vertical Separation Distance Between the Bottom of The Disposal Works and the Seasonal High Water Table (feet)</u>		<u>Maximum Allowable Total Coliform Concentration, 95th Percentile, Delivered to Natural Soil by the Disposal Works (Log₁₀ of coliform concentration in cfu per 100 milliliters)</u>
<u>For SAR*, 0.20 to 0.63</u>	<u>For SAR*, 0.63+ to 1.20</u>	
<u>5</u>	<u>10</u>	<u>8**</u>
<u>4</u>	<u>8</u>	<u>7</u>
<u>3.5</u>	<u>7</u>	<u>6</u>
<u>3</u>	<u>6</u>	<u>5</u>
<u>2.5</u>	<u>5</u>	<u>4</u>
<u>2</u>	<u>4</u>	<u>3</u>
<u>1.5</u>	<u>3</u>	<u>2</u>
<u>1</u>	<u>2</u>	<u>1</u>
<u>0</u>	<u>0</u>	<u>0***</u>

* Soil absorption rate from percolation testing or soil characterization, in gallons per square foot per day.

** Nominal value for a standard septic tank and disposal field (10⁸ colony forming units per 100 ml).

*** Nominally free of coliform bacteria.

- b. Include a hydraulic analysis with the Notice Of Intent To Discharge, based on the dimensions of the absorption surfaces specified in R18-9-A312(B)(4)(b), showing that the soil is sufficiently permeable to conduct wastewater downward and laterally without surfacing for the site conditions at the disposal works.
3. To determine the minimum vertical separation, the nearest limiting subsurface condition means a property of the soil or a zone in the subsurface that critically restricts or critically and adversely accelerates downward percolation of wastewater. Limiting subsurface conditions may include, but are not limited to, the seasonal high water table capillary fringe, a substantially impermeable layer of soil or rock, fractured rock, or soil with greater than 50% rock frag-

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ments: Vertical separation from a subsurface limiting condition described in R18-9-A310(D)(2)(d) that may cause or contribute to surfacing of wastewater. If a subsurface limiting condition described in R18-9-A310(D)(2)(d) exists at the location of the disposal works, the applicant shall ensure that the design for the on-site wastewater treatment facility meets one of the following:

- a. A zone of acceptable native soil with the following characteristics exists between the bottom of the disposal works and the top of the subsurface limiting condition:
 - i. The zone of soil is at least 4 feet thick, and
 - ii. The zone of soil is sufficiently permeable to conduct wastewater released from the disposal works vertically downward and laterally without causing surfacing of the wastewater as documented by a hydraulic analysis submitted with the Notice of Intent to Discharge that is based on the dimensions of the absorption surfaces specified in R18-9-A312(B)(4)(b);
- b. The subsurface limiting condition is thin enough to allow placement of a disposal works into acceptable native soil beneath the subsurface limiting condition if the following criteria are met:
 - i. The bottom of the subsurface limiting condition is not deeper than 10 feet below the land surface, and
 - ii. The vertical separation distance from the bottom of the disposal works to the seasonal high water table complies with subsection (E)(1) or (2), as applicable; or
- c. If the disposal works is placed above the subsurface limiting condition and the depth to the subsurface limiting condition is less than 4 feet below the bottom of the disposal works, the design for the on-site wastewater treatment facility shall comply with all of the following:
 - i. Employ one or more technologies described in R18-9-E303 through R18-9-E322 to achieve a reduced concentration of harmful microorganisms, expressed as total coliform in colony forming units per 100 milliliters (cfu/100 ml), delivered to acceptable native soil at the bottom of the disposal works, as follows:

<u>Available Vertical Separation Distance from the Bottom of the Disposal Works to the Subsurface Limiting Condition (feet)</u>	<u>Maximum Allowable Total Coliform Concentration, 95th Percentile, Delivered to Acceptable Native Soil by the Disposal Works (Log₁₀ of coliform concentration in cfu per 100 milliliters)</u>
<u>3.5</u>	<u>7</u>
<u>3</u>	<u>6</u>
<u>2.5</u>	<u>5</u>
<u>2</u>	<u>4</u>
<u>1.5</u>	<u>0*</u>
<u>1</u>	<u>0*</u>
<u>0.5</u>	<u>0*</u>
<u>0</u>	<u>0*</u>

* Nominally free of coliform bacteria.

- ii. If the SAR of the native soil into which the disposal works is placed is not more than 0.63 gallons per day per square foot, include a hydraulic analysis with the Notice of Intent to Discharge, based on the location and dimensions of the absorption surfaces specified in R18-9-A312(B)(4)(b), showing that the soil is sufficiently permeable to conduct wastewater vertically downward and laterally without surfacing for the site conditions at the disposal works; and
 - iii. If a disinfection device under R18-9-E320 is proposed but is not used with surface disposal of wastewater under R18-9-E321 or "Category A" drip irrigation disposal under R18-9-E322, provide a justification with the Notice of Intent to Discharge stating why the selected type of disposal works is favored over disposal under R18-9-E321 or R18-9-E322.
4. Vertical separation from a subsurface limiting condition described in R18-9-A310(D)(2)(e) that promotes accelerated downward movement of insufficiently treated wastewater. If a subsurface limiting condition described in R18-9-

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A310(D)(2)(e) exists at the location of the proposed disposal works, the applicant shall ensure that the design for the on-site wastewater treatment facility meets one of the following:

- a. A zone of naturally occurring soil with the following characteristics exists between the bottom of the disposal works and the top of the subsurface limiting condition:
 - i. The zone of soil is at least 2 feet thick, and
 - ii. The SAR of the soil is not less than 0.20 gallons per day per square foot nor more than 1.20 gallons per day per square foot; or
- b. The on-site wastewater treatment facility employs one or more technologies described in R18-9-E303 through R18-9-E322 that produces treated wastewater that meets a total coliform concentration of 1,000,000 (Log₁₀ 6) colony forming units per 100 milliliters, 95th percentile.

F. Materials and manufactured system components.

1. ~~Materials. If no materials specifications are required under this Article, aggregate may be used in disposal trenches or for other uses in an on-site wastewater treatment facility. An applicant shall use aggregate if no specification for disposal works material is provided in this Article.~~
2. Manufactured components. If manufactured components are used, an applicant shall design, install, and operate the on-site wastewater treatment facility following the manufacturer's specifications. The applicant shall ensure that:
 - a. ~~If manufactured components are used, the on-site wastewater treatment facility shall be designed, installed and operated following the manufacturer's specifications. The process described in subsection (G) shall be used to propose any deviation that is less stringent than the manufacturer's specifications.~~
 - b. ~~a.~~ Treatment and containment components, mechanical equipment, instrumentation, and controls shall have monitoring, inspection, access and cleanout ports or covers, as appropriate, for monitoring and service;
 - c. ~~b.~~ Treatment and containment components, pipe, fittings, pumps, and related components and controls shall be durable, watertight, structurally sound, and capable of withstanding stress from installation and operational service; and
 - d. ~~c.~~ Distribution lines for disposal fields shall be constructed of clay tile laid with open joints, perforated clay pipe, perforated high density polyethylene pipe, perforated ABS pipe, or perforated PVC pipe if the pipe is suitable for wastewater disposal use and sufficient openings are available for distribution of the wastewater into the trench or bed area.
3. ~~Electronics~~ Electronic components. When electronic components are used, the applicant shall ensure that:
 - a. Instructions and a wiring diagram shall be mounted on the inside of a control panel cover;
 - b. The control panel shall be equipped with a multimode operation switch, red alarm light, buzzer, and reset button;
 - c. The multimode operation switch shall operate in the automatic position for normal system operation; and
 - d. An anomalous condition shall be indicated by a glowing alarm light and sounding buzzer. The continued glowing of the alarm light after pressing the reset button shall signal the need for maintenance or repair of the system at the earliest practical opportunity.
4. If a conflict exists between this Article and the manufacturer's specifications, the requirements of this Article apply. Except for the requirements in subsection (D) and (E), which always apply, if the conflict voids a manufacturer's warranty, the applicant may submit a request under subsection (G) justifying use of the manufacturer's specifications.

G. Alternative design, setback, installation, or operational features. When ~~a person~~ an applicant submits a Notice of Intent to Discharge, the ~~person~~ applicant may request that the Department review and approve a feature of improved or alternative technology, design, setback, installation, or operation that differs from a general permit requirement in this Article.

1. The ~~person~~ applicant shall make the request for an improved or alternative feature of technology, design, setback, installation, or operation on a form provided by the Department and include:
 - a. A description of the requested change;
 - b. A citation to the applicable feature of technology, design, setback, installation, or operational requirement for which the change is being requested; and
 - c. Justification for the requested change, including any necessary supporting documentation.
2. The ~~person~~ applicant shall submit the appropriate fee specified under 18 A.A.C. 14 for each requested change. For purposes of calculating the fee, a requested change that is applied multiple times in a similar manner throughout the facility is considered a single request if submitted for concurrent review.
3. The ~~person~~ applicant shall provide sufficient information for the Department to determine that the change achieves equal or better performance compared with the general permit requirement, or addresses site or system conditions more satisfactorily than the requirements of this Article.
4. The Department shall review and may approve the request for change.
5. The Department shall deny the request for the change if the change will adversely ~~affects~~ affect other permittees or ~~causes cause or contributes contribute~~ to a violation of an Aquifer Water Quality Standard.
6. The Department shall deny the request for the change if the change:

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- a. Fails to achieve equal or better performance compared to the general permit requirement;
 - b. Fails to address site or system conditions more satisfactorily than the general permit requirement;
 - c. Is insufficiently justified based on the information provided in the submittal;
 - d. Requires excessive review time, research, or specialized expertise by the Department to act on the request; or
 - e. For any other justifiable cause.
7. The Department may approve a reduced setback for a facility authorized to discharge under one or more of the general permits in R18-9-E303 through R18-9-E322, either separately or in combination with a septic tank system authorized under R18-9-E302, if the applicant demonstrates that:
- a. The treatment performance is significantly better than that provided under R18-9-E302(B).
 - b. The wastewater loading rate is reduced, or
 - c. Surface or subsurface characteristics ensure that reduced setbacks are protective of human health or water quality.

R18-9-A313. Facility Installation, ~~and~~ Operation, and Maintenance ~~Plan For~~ for On-site Wastewater Treatment Facilities

- A. Facility installation. In addition to installation requirements in the general permit, the applicant shall ensure that the following tasks are performed, as applicable:
1. The facility is installed as described in design documents submitted with the Notice of Intent to Discharge;
 2. Components are installed on a firm foundation that supports the components and operating loads;
 3. The site is prepared to protect native soil beneath the soil absorption area and in adjacent areas from compaction, prevent smeared absorption surfaces, minimize disturbances from grubbing, and otherwise preclude damage to the disposal area that would impair performance;
 4. Components are protected from damage at the construction site and installed in conformance with the manufacturer's instructions if consistent with this Article;
 5. Treatment media is are placed to achieve uniform density, prevent differential settling, produce a level inlet surface unless otherwise specified by the manufacturer, and avoid introduction of construction contaminants;
 6. Backfill is placed to prevent damage to geotextile, ~~liner materials~~ liners, tanks, and other components;
 7. Soil cover is shaped to shed rainfall away from the backfill areas and prevent ponding of runoff; and
 8. Anti-buoyancy measures are implemented during construction if temporary saturated backfill conditions are anticipated during construction.
- B. Operation and maintenance. In addition to operation and maintenance requirements in the general permit or specified in the ~~Operation and Maintenance Plan~~ operation and maintenance manual, the permittee shall ensure that ~~perform~~ the following tasks are performed, as applicable:
1. ~~Inspect Pump accumulated residues, inspect and clean pretreatment and~~ inspect and clean pretreatment and wastewater treatment and distribution components, and manage residues to protect human health and the environment;
 2. Clean, or backwash, or replace any effluent filters, and return cleaning water to the pretreatment headworks according to the manufacturer's instructions, and manage residues to protect human health and the environment;
 3. Inspect and clean the effluent baffle screen and pump tank, and properly dispose of cleaning residue;
 4. Clean the dosing tank effluent screen, pump switches, and floats, and properly dispose of cleaning residue;
 5. Flush lateral lines and return flush water to the pretreatment headworks;
 6. Inspect, remove and replace, if necessary, and properly dispose of filter media;
 7. Rod pressurized wastewater delivery lines and secondary distribution lines (for dosing systems), and return cleaning water to the pretreatment headworks;
 8. Inspect and clean pump inlets and controls and return cleaning water to the pretreatment headworks;
 9. Implement corrective measures if anomalous ponding, dryness, noise, odor, or differential settling is observed; ~~and~~
 10. Inspect and monitor inspection and access ports, as applicable, to verify that operation and maintenance is within expected limits for:
 - a. Influent wastewater quality;
 - b. ~~Pressurized~~ The pressurized dosing system ~~operation~~;
 - c. ~~Aggregate~~ The aggregate infiltration bed and mound system ~~operation and performance~~;
 - d. Wastewater delivery and the engineered pad ~~operation and performance~~;
 - e. ~~Pressurized~~ The pressurized delivery system, filter, underdrain, and native soil absorption system ~~operation and performance~~;
 - f. Saturation condition status, ~~operation and performance~~ in peat and other media; and
 - g. Treatment system components;
 11. Inspect tanks, liners, ports, seals, piping, and appurtenances for watertightness under all operational conditions;
 12. Manage vegetation in areas that contain components subject to physical impairment or damage due to root invasion or animals;
 13. Maintain drainage, berms, protective barriers, cover materials, and other features; and

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14. Maintain the usefulness of the reserve area to allow for repair or replacement of the on-site wastewater treatment facility.

R18-9-A314. Septic Tank Design, Manufacturing, and Installation ~~For~~ for On-site Wastewater Treatment Facilities

A. ~~A septic tanks manufacturer shall assure that septic tanks approved for installation under this Article are:~~ A person shall not install a septic tank in an on-site wastewater treatment facility unless the tank meets the following requirements:

1. The tank is:
 - a. Designed to produce a clarified effluent and provide adequate space for sludge and scum accumulations;
 - ~~2-b.~~ Watertight and constructed of solid durable materials not subject to excessive corrosion or decay;
 - ~~3-c.~~ Manufactured with at least two compartments unless two separate structures are placed in series. The manufacturer shall ensure that tank is designed so that:
 - ~~a-i.~~ The inlet compartment of any septic tank not placed in series is nominally 67% percent to 75% percent of the total required capacity of the tank,
 - ~~b-ii.~~ Septic tanks placed in series are considered a unit and meet the same criteria as a single tank,
 - ~~e-iii.~~ The liquid depth of the septic tank is at least 42 inches, and
 - ~~d-iv.~~ A septic tank of 1000 gallon capacity is at least eight 8 feet long and the tank length of septic tanks of greater capacity is at least two 2 times but not more than three 3 times the width;
 - 4-d. Provided Manufactured with at least two access openings to the tank interior, each at least 20 inches in diameter. The manufacturer shall ensure tank is designed so that:
 - ~~a-i.~~ One access opening is located over the inlet end of the tank and one access opening is located over the outlet end;
 - ~~b-ii.~~ Whenever a first compartment exceeds 12 feet in length, another access opening is provided over the baffle wall; and
 - ~~e-iii.~~ Access openings and risers are constructed to ensure accessibility within six 6 inches below finished grade;
 - 5-e. Manufactured so that the sewage inlet and wastewater outlet openings are not less in size smaller than the connecting sewer pipe. The manufacturer shall ensure tank is designed so that:
 - ~~a-i.~~ The vertical leg of round inlet and outlet fittings is at least four 4 inches but not less in size smaller than the connecting sewer pipe, and
 - ~~b-ii.~~ A baffle fitting has the equivalent cross-sectional area of the connecting sewer pipe and not less than a four 4-inch horizontal dimension if measured at the inlet and outlet pipe inverts;
 - 6-f. Manufactured so that the inlet and outlet pipe or baffle extends four 4 inches above and at least 12 inches below the water surface when the tank is installed according to the manufacturer's instructions consistent with this Chapter. The invert of the inlet pipe shall be is at least two 2 inches above the invert of the outlet pipe;
 - 7-g. Manufactured so that the inlet and outlet fittings or baffles and compartment partitions have a free vent area equal to the required cross-sectional area of the connected sewer pipe to provide free ventilation above the water surface from the disposal field works or seepage pit through the septic tank, house sewer, and stack to the outer air;
 - 8-h. Manufactured so that the side walls extend open space extends at least 12 9 inches above the liquid depth level and the cover of the septic tank is at least two 2 inches above the top of the inlet fitting vent opening;
 - 9-i. Manufactured so that partitions or baffles between compartments are of solid durable material (wooden baffles are prohibited) and extend at least four 4 inches above the liquid level. The manufacturer shall ensure that the open area of the baffle is shall be between one and two 2 times the open area of the inlet pipe or horizontal slot and located at the midpoint of the liquid level of the baffle. If a horizontal slot is used, the slot shall be no more than six 6 inches in height;
 - 10-j. Structurally designed to withstand all anticipated earth or other loads. The manufacturer shall ensure tank is designed so that:
 - ~~a-i.~~ All septic tank covers are capable of supporting an earth load of 300 pounds per square foot; and
 - ~~b-ii.~~ If the top of the tank is greater than two 2 feet below finish grade, the septic tank and cover are capable of supporting an additional load of 150 pounds per square foot for each additional foot of cover;
 - 11-k. Manufactured or installed so that the influent and effluent ends of the tank are clearly and permanently marked on the outside of the tank with the words "INLET" or "IN," and "OUTLET" or "OUT," above or to the right or left of the corresponding openings; and
 - 12-l. Clearly and permanently marked with the manufacturer's name or registered trademark, or both, the month and year of manufacture, the maximum recommended depth of earth cover in feet, and the design liquid capacity of the tank. The manufacturer shall protect tank is manufactured to protect the markings from corrosion so that they remain permanent and readable for the usable operational life of the tank.
- B.2.** Materials used to construct or manufacture septic tanks.
 - 1-a. A person constructing a concrete septic tank cast-in-place at the site of use shall protect the tank be protected from corrosion by coating the tank with a bituminous coating, by constructing the tank using a concrete mix that incorporates 15% percent to 18% percent fly ash, or by any other Department-approved means. The manufac-

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~~turer shall ensure tank is designed so that:~~

- ~~a.i.~~ The coating extends at least ~~four~~ 4 inches below the wastewater line and covers all of the internal area above that point; ~~and~~
- ~~b.ii.~~ A septic tank cast-in-place complies with the "Building Code Requirements for Structural Concrete (ACI 318-99) and Commentary (ACI 318R-99) ACI 318-02/318R-02 (2002)," published by the American Concrete Institute, June 1999; and the "Code Requirements for Environmental Engineering Concrete Structures and Commentary (ACI 350R-89) ACI 350/350R-01 (2001)," published by the American Concrete Institute, January 2000. This material is incorporated by reference and does not include any later amendments or editions of the incorporated ~~matter~~ material. Copies of the incorporated material are available for inspection at the Arizona Department of Environmental Quality, 1110 W. Washington Street, Phoenix, AZ 85007 ~~and the Office of the Secretary of State~~, or may be obtained from American Concrete Institute, P.O. Box 9094, Farmington Hills, MI 48333-9094.
- ~~2.b.~~ A ~~septic tank manufacturer shall ensure that a steel septic tank has~~ shall have a minimum wall thickness of No. 12 U.S. gauge steel and ~~is~~ be protected from corrosion, internally and externally, by a bituminous coating or other Department-approved means.
- ~~3.c.~~ A ~~septic tank manufacturer shall ensure that a prefabricated concrete septic tank~~ complies with ~~complies with~~ shall meet the "Standard Specification for Precast Concrete Septic Tanks, C1227-03," published by the American Society for Testing and Materials, (C 1227 00), approved January 10, 2000. This information is incorporated by reference and does not include any later amendments or editions of the incorporated ~~matter~~ material. Copies of the incorporated material are available for inspection at the Arizona Department of Environmental Quality, 1110 W. Washington Street, Phoenix, AZ 85007 ~~and the Office of the Secretary of State~~, or may be obtained from the American Society for Testing and Materials International, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.
- ~~4.d.~~ A ~~septic tank manufacturer shall ensure that materials for A septic tank manufactured using fiberglass or polyethylene septic tanks~~ comply with ~~comply with~~ shall meet the "Material and Property Standards for Prefabricated Septic Tanks, IAPMO PS 1-2004," published by the International Association of Plumbing and Mechanical Officials, (IAPMO PS 1-99, revised January 1999). This information is incorporated by reference, does not include any later amendments or editions of the incorporated ~~matter~~ material, and ~~is on file with the Office of the Secretary of State~~. The ~~material~~ material may be viewed at the Arizona Department of Environmental Quality, 1110 W. Washington Street, Phoenix, AZ 85007, Water Quality Division, or obtained from International Association of Plumbing & Mechanical Officials, 20001 E. Walnut Drive, South, Walnut, CA 91789-2825.

C.3. Conformance with design, materials, and manufacturing requirements.

- ~~a.~~ If any conflict exists between this Article and the information incorporated by reference in ~~subsections (B)(3) and (B)(4)~~ subsection (2), the requirements of this Article apply.
- ~~b.~~ The Department may approve ~~septic tanks constructed use of~~ alternative construction materials under R18-9-A312(G). Tanks constructed of wood, block, or bare steel are prohibited.
- ~~c.~~ The Department may inspect septic tanks at the site of manufacturing to verify compliance with ~~subsections (A) through (C) (1) and (2)~~.
- ~~d.~~ The septic tank sale documentation includes:
 - ~~i.~~ A certificate attesting that the septic tank conforms with the design, materials, and manufacturing requirements in subsections (1) and (2); and
 - ~~ii.~~ Instructions for handling and installation the septic tank.

D.4. An applicant shall select a septic tank with a design liquid capacity. The septic tank's daily design flow is determined as follows:

- ~~1.a.~~ For a single family ~~residence, dwelling the:~~
 - ~~i.~~ The design liquid capacity of a the septic tank is governed by the following table and the septic tank's daily design flow are determined based on the number of bedrooms and fixture count as follows:

No. of Bedrooms	No. of Occupants	No. of Baths	Maximum Fixture Count	Minimum Septic Tank Size (gallons)
2	4	1-2	18	1000
3	6	1-2	18	1000
4	8	2-3	25	1250
5	10	2-4	32	1500

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6	12	3-5	39	2000
7	14	3-5	42	2000

<u>Criteria for Septic Tank Size and Design Flow</u>			
<u>Number of Bedrooms</u>	<u>Fixture Count</u>	<u>Minimum Design Liquid Capacity (gallons)</u>	<u>Design Flow (gal/day)</u>
1	<u>7 or less</u>	<u>1000</u>	<u>150</u>
	<u>More than 7</u>	<u>1000</u>	<u>300</u>
2	<u>14 or less</u>	<u>1000</u>	<u>300</u>
	<u>More than 14</u>	<u>1000</u>	<u>450</u>
3	<u>21 or less</u>	<u>1000</u>	<u>450</u>
	<u>More than 21</u>	<u>1250</u>	<u>600</u>
4	<u>28 or less</u>	<u>1250</u>	<u>600</u>
	<u>More than 28</u>	<u>1500</u>	<u>750</u>
5	<u>35 or less</u>	<u>1500</u>	<u>750</u>
	<u>More than 35</u>	<u>2000</u>	<u>900</u>
6	<u>42 or less</u>	<u>2000</u>	<u>900</u>
	<u>More than 42</u>	<u>2500</u>	<u>1050</u>
7	<u>49 or less</u>	<u>2500</u>	<u>1050</u>
	<u>More than 49</u>	<u>3000</u>	<u>1200</u>
8	<u>56 or less</u>	<u>3000</u>	<u>1200</u>
	<u>More than 56</u>	<u>3000</u>	<u>1350</u>

ii. Fixture count is determined as follows:

<u>Residential Fixture Type</u>	<u>Fixture Units</u>	<u>Residential Fixture Type</u>	<u>Fixture Units</u>
<u>Bathtub</u>	<u>2</u>	<u>Sink, bar</u>	<u>1</u>
<u>Bidet</u>	<u>2</u>	<u>Sink, kitchen (including dishwasher)</u>	<u>2</u>
<u>Clothes washer</u>	<u>2</u>	<u>Sink, service</u>	<u>3</u>
<u>Dishwasher (Separate from kitchen)</u>	<u>2</u>	<u>Utility tub or sink</u>	<u>2</u>
<u>Lavatory, single</u>	<u>1</u>	<u>Water closet, 1.6 gallons per flush (gpf)</u>	<u>3</u>
<u>Lavatory, double in master bedroom</u>	<u>1</u>	<u>Water closet, >1.6 to 3.2 gpf</u>	<u>4</u>
<u>Shower, single stall</u>	<u>2</u>	<u>Water closet, greater than 3.2 gpf</u>	<u>6</u>

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- 2-b. For other than a single residence family dwelling, the recommended design liquid capacity of a septic tank in gallons is 2.1 times the daily design flow into the tank as determined from Table 1, Unit Daily Design Flows. If the wastewater strength exceeds that of typical sewage, additional tank volume is required.
- 3-c. ~~An applicant~~ A person may place two septic tanks in series to meet the septic tank design liquid capacity requirements if the capacity of the first tank is at least 67 percent of the total required tank capacity and the capacity of the second tank is at least 33 percent of the total required tank capacity.
- ~~E-5. New~~ The following requirements regarding new or replacement septic tank installation apply: ~~An applicant shall:~~
- 1-a. ~~Provide permanent~~ Permanent surface markers for locating the septic tank access openings are provided for maintenance;
 - 2-b. ~~Ensure that septic tanks~~ A septic tank installed under concrete or pavement ~~have~~ has the required access openings extended to grade;
 - 3-c. ~~Install a~~ A septic tank effluent filter is installed on all the septic tanks and. The applicant ~~shall ensure that the filter shall:~~
 - a-i. ~~Prevents~~ Prevent the passage of solids larger than 1/8 inch in diameter while under ~~two~~ 2 feet of hydrostatic head; and
 - b-ii. ~~Is~~ Be constructed of materials that are resistant to corrosion and erosion, ~~and~~ sized to accommodate hydraulic and organic loading, ~~and removable for cleaning and maintenance; and~~
 - 4-d. ~~Test cast in place septic tanks and multi part septic tanks assembled and sealed at the site of use~~ The septic tank is tested for watertightness after installation by the water test described in subsections (5)(d)(i) and (5)(d)(ii) or the vacuum test and repair repaired or replaced, if necessary.
 - a. ~~Water test:~~
 - i. ~~The applicant shall ensure that the~~ septic tank is filled with clean water, as specified in R18-9-A310(A), to the invert of the outlet and the water left standing in the tank for 24 hours. The applicant shall and:
 - (1) After 24 hours, ~~refill~~ the tank is refilled to the invert, if necessary;
 - (2) ~~Record the~~ The initial water level and time is recorded; and
 - (3) After one hour, ~~record the~~ water level and time is recorded.
 - ii. The tank passes the water test if the water level ~~dropped less than 1/4 inch~~ does not drop over the one-hour period. Any visible leak of flowing water is considered a failure. A damp or wet spot that is not flowing is not considered a failure.
 - b. ~~Vacuum test:~~
 - i. ~~The applicant shall:~~
 - (1) Seal the empty tank;
 - (2) Apply and stabilize a vacuum of two inches of mercury; and
 - (3) Monitor the vacuum for one hour.
 - ii. ~~The tank passes the vacuum test if the mercury level dropped no more than 0.2 inches over the one hour period.~~

R18-9-A315. Interceptor Design, Manufacturing, and Installation For for On-site Wastewater Treatment Facilities

- A. Interceptor requirement. An applicant shall ensure that an interceptor as required by ~~R18-9-A309(A)(8)(e)~~ R18-9-A309(A)(7)(c) or necessary due to excessive amounts of grease, garbage, sand, or other wastes in the sewage is installed between the sewage source and the on-site wastewater treatment facility.
- B. Interceptor design. An applicant shall ensure that:
1. An interceptor has not less than two compartments with fittings designed for grease retention and capable of removing excessive amounts of grease, garbage, sand, or other wastes. Applicable structural and materials requirements prescribed in R18-9-A314 apply;
 2. Interceptors are located as close to the source as possible and are accessible for servicing. The applicant shall ensure that access openings for servicing are at grade level and gas-tight;
 3. ~~The applicant shall calculate~~ interceptor size for grease and garbage from non-residential kitchens ~~by~~ is calculated using the following equation: Interceptor Size (in gallons) = M × F × T × S.
 - a. "M" is the number of meals per peak hour;
 - b. "F" is the waste flow rate from Table 1, Unit Daily Design Flows.
 - c. "T" is the estimated retention time:
 - i. Commercial kitchen waste, dishwasher or disposal: 2.5 hours; or
 - ii. Single service kitchen with utensil wash disposal: 1.5 hours;
 - d. "S" is the estimated storage factor:
 - i. Fully equipped commercial kitchen, 8-hour operation: 1.0;
 - ii. Fully equipped commercial kitchen, 16-hour operation: 2.0;
 - iii. Fully equipped commercial kitchen, 24-hour operation: 3.0; or
 - iv. Single service kitchen: 1.5; and
 4. ~~The applicant shall calculate~~ interceptor size for silt and grease from laundries and laundromats ~~by~~ is calculated using

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the following equation: Interceptor Size (in gallons) = $M \times C \times F \times T \times S$.

- a. "M" is the number of machines;
- b. "C" is the machine cycles per hour (assume 2);
- c. "F" is the waste flow rate from-Table 1, Unit ~~Daily~~ Design Flows;
- d. "T" is the estimated retention time (assume 2); and
- e. "S" is the estimated storage factor (assume 1.5 that allows for rock filter).

C.5. The applicant may calculate the size of an interceptor using different factor values than those given in subsections ~~(B)(4) and (B)(5)~~ (B)(3) and (4) based on the values justified by the applicant in the Notice of Intent to Discharge submitted to the Department for the on-site wastewater treatment facility.

D.6. The Department may require installation of a sampling box if the volume or characteristics of the waste will impair the performance of the on-site wastewater treatment facility.

R18-9-A316. Transfer of Ownership Inspection ~~For~~ for On-site Wastewater Treatment Facilities

A. Conforming with this Section satisfies the Notice of Transfer requirements under R18-9-A304.

~~**A.B.** A person possessing working knowledge of the type of facility and the inspection process shall perform a transfer inspection of an on-site wastewater treatment facility. Within six months before the date of property transfer, the person who is transferring a property served by an on-site wastewater treatment facility shall retain an inspector to perform a transfer of ownership inspection of the on-site wastewater treatment facility who meets the following qualifications:~~

1. Possesses working knowledge of the type of facility and the inspection process;
2. Holds a certificate of training from a course recognized by the Department as sufficiently covering the information specified in this Section by July 1, 2006; and
3. Holds a license in one of the following categories:
 - a. An Arizona-registered engineer;
 - b. An Arizona-registered sanitarian;
 - c. An owner of a vehicle with a human excreta collection and transport license issued under 18 A.A.C. 13, Article 11 or an employee of the owner of the vehicle;
 - d. A contractor licensed by the Registrar of Contractors in one of the following categories:
 - i. Residential license B-4 or C-41;
 - ii. Commercial license A, A-12, or L-41; or
 - iii. Dual license KA or K-41;
 - e. A wastewater treatment plant operator certified under 18 A.A.C 5, Article 1; or
 - f. A person qualifying under another category designated by the Department.

~~**B.C.** The applicant inspector shall send the complete a Report of Inspection and Notice of Transfer forms required by R18-9-A304 and on a form approved by the Department, and any applicable fee to the health or environmental agency delegated by the Director to administer the on-site wastewater treatment facility program sign it, and provide it to the person transferring the property. The Report of Inspection shall:~~

1. The Report of Inspection shall:
 - a. Indicate that the on-site wastewater treatment facility was inspected within six months before the deed of transfer for the property was recorded; and
 - 1.b. Address the physical and operational condition of the on-site wastewater treatment facility and identify associated describe observed deficiencies and repairs completed, if any;
2. A copy of the Report of Inspection shall be transmitted to the buyer of the property. Indicate that each septic tank or other wastewater treatment container on the property was pumped or otherwise serviced to remove, to the maximum extent possible, solid, floating, and liquid waste accumulations, or that pumping or servicing was not performed for one of the following reasons:
 - a. A Discharge Authorization for the on-site wastewater treatment facility was issued and the facility was put into service within 12 months before the transfer of ownership inspection.
 - b. Pumping or servicing was not necessary at the time of the inspection based on the manufacturer's written operation and maintenance instructions, or
 - c. No accumulation of floating or settled waste was present in the septic tank or wastewater treatment container; and
3. Indicate the date the inspection was performed.

~~**C.D.** This Section does not apply to the first sale of a house or property from a developer or subdivider to the buyer of the property. Before the property is transferred, the person transferring the property shall provide to the person to whom the property is transferred:~~

1. The completed Report of Inspection; and
2. Documents in the person's possession relating to permitting, operation, and maintenance of the on-site wastewater treatment facility.

E. The person to whom the property is transferred shall complete a Notice of Transfer on a form approved by the Department and send the form with the applicable fee specified in 18 A.A.C. 14 within 15 calendar days after the property transfer to:

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1. The Department for transfer of a property with an on-site wastewater treatment facility for which construction was completed before January 1, 2001; or
 2. The health or environmental agency delegated by the Director to administer the on-site wastewater treatment facility program for transfer of a property with an on-site wastewater treatment facility constructed on or after January 1, 2001.
- F.** If the Department issued a Discharge Authorization for the on-site wastewater treatment facility but the facility was not put into service before the property transfer, an inspection of the facility is not required and the transferee shall complete the Notice of Transfer form as specified in subsection (E).
- G.** Effective date.
1. The owner of an on-site wastewater treatment facility operating under a Type 4 General Permit shall comply with this Section by November 12, 2005.
 2. The owner of any on-site wastewater treatment facility other than a facility identified in subsection (G)(1) shall comply with this Section by July 1, 2006.

R18-9-A317. Nitrogen Management Area

- A.** The Director may designate a new Nitrogen Management Area to control groundwater pollution by sources of nitrogen regulated by Title 49, Chapter 2, Article 3 of the Arizona Revised Statutes and not covered under an individual permit, modify the boundaries or requirements of a Nitrogen Management Area, or rescind designation of a Nitrogen Management Area.
1. If existing conditions or trends in nitrogen loading to an aquifer will cause or contribute to an exceedance of the Aquifer Water Quality Standard for nitrate at a point or points of current or reasonably foreseeable use of the aquifer, the Director shall use the following criteria to determine whether to designate the area as a Nitrogen Management Area:
 - a. Population of the area;
 - b. The degree to which the area is unsewered;
 - c. Gross areal nitrogen loading, calculated as the amount of nitrogen discharged into the subsurface by use of on-site wastewater treatment facilities, divided by the land area under consideration for designation as a Nitrogen Management Area;
 - d. Population growth rate of area;
 - e. Existing contamination of groundwater by nitrogen species;
 - f. Existing and potential impact to groundwater by sources of nitrogen other than on-site wastewater treatment facilities;
 - g. Characteristics of the vadose zone and aquifer;
 - h. Location, number, and areal extent of existing and potential sources of nitrogen;
 - i. Location and characteristics of existing and potential drinking water supplies; and
 - j. Any other information relevant to determining the severity of actual or potential nitrogen impact on the aquifer.
 2. The Director may modify the boundaries or requirements of a Nitrogen Management Area or rescind designation of a Nitrogen Management Area based on:
 - a. A material change to one or more criterion specified in subsection (A)(1); or
 - b. The adoption by a local agency of a master plan to substantially sewer the area as soon as possible, but with a completion deadline within 10 years, unless a completion deadline of more than 10 years is approved by the Director.
- B.** Preliminary designation, modification, or rescission.
1. The Director shall provide a report to the mayors and members of the Board of Supervisors of all towns, cities, and counties and the directors of all sanitary districts affected by the Department's proposed action to designate, modify, or rescind a Nitrogen Management Area as follows:
 - a. If the Department proposes to designate a Nitrogen Management Area, the Department shall provide a report discussing each criterion specified in subsection (A)(1).
 - b. If the Department proposes to modify the boundaries or requirements of a Nitrogen Management Area or rescind the designation of a Nitrogen Management Area, the Department shall provide a report discussing applicable criteria in subsections (A)(1) and (2).
 2. The town, city, county, or sanitary district receiving the Director's report may provide written comments to the Department within 120 days to dispute the factual information presented in the report and supply any information supporting the comments.
 3. The Director shall evaluate the comments and supporting information obtained under subsection (B)(2) and either designate, modify, or rescind the Nitrogen Management Area or withdraw the proposal.
- C.** Final designation.
1. If the Director designates or modifies the Nitrogen Management Area, the Department shall:
 - a. Issue or modify the Nitrogen Management Area designation and any special provisions established for the area to control groundwater pollution by sources of nitrogen regulated by Title 49, Chapter 2, Article 3 of the Arizona Revised Statutes but not covered under an individual permit. The Department shall provide notice to the mayors

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and members of the Board of Supervisors of all towns, cities, and counties and the directors of all sanitary districts affected by the determination;

b. Maintain the designation and a map showing the boundaries of the Nitrogen Management Area at the Arizona Department of Environmental Quality, 1110 West Washington, Phoenix, Arizona 85007 and on the Department's web site at www.azdeq.gov; and

c. Provide, upon request, a copy of the Nitrogen Management Area designation and a map of the area.

2. If the Director withdraws the preliminary Nitrogen Management Area designation or rescinds the Nitrogen Management Area designation, the Director shall issue a determination stating the decision and post it on the Department's web site at www.azdeq.gov.

D. Nitrogen Management Area requirements. Within a Nitrogen Management Area:

1. The Department shall issue a Construction Authorization, under R18-9-A301(D)(1)(c), for an on-site wastewater treatment facility only if the applicant proposes, in the Notice of Intent to Discharge, to employ one or more of the technologies allowed under R18-9-E302 through R18-9-E322 that achieves a discharge level containing not more than 15 mg/l of total nitrogen.

2. An agricultural operation shall use the best control measure necessary to reduce nitrogen discharge when implementing the best management practices developed under 18 A.A.C. 9, Article 4. The Director may require the owner or operator to reassess the performance of the impoundment liner systems constructed under R18-9-403 before November 12, 2005.

3. A person shall comply with any special provision established for the Nitrogen Management Area, as applicable, for the person's facility.

PART B. TYPE 1 GENERAL PERMITS

R18-9-B301. Type 1 General Permit

A. A 1.01 General Permit allows any discharge of wash water from a sand and gravel operation, placer mining operation, or other similar activity, including construction, foundation, and underground dewatering, if only physical processes are employed and only hazardous substances at naturally occurring concentrations in the sand, gravel, or other rock material are present in the discharge.

B. A 1.02 General Permit allows any discharge from hydrostatic tests of a drinking water distribution system and pipelines not previously used, if all the following conditions are met:

1. The quality of the water used for the test does not ~~violate any~~ exceed an Aquifer Water Quality Standard or for non-drinking water pipelines, if reclaimed water is used, the reclaimed water meets Class A+ Reclaimed Water Quality Standards under A.A.C. R18-11-303 or Class B+ Reclaimed Water Quality Standards under A.A.C. R18-11-305;

2. The discharge is not to ~~waters a water~~ of the United States, unless the discharge is under a ~~National Pollution Discharge Elimination System~~ an AZPDES permit; and

3. The test site is restored to its natural grade.

C. A 1.03 General Permit allows any discharge from hydrostatic tests of a pipeline, ~~tank, or appurtenance~~ previously used for transmission of fluid, other than those previously used for drinking water distribution systems, if all the following conditions are met:

1. All liquid discharge is contained in an impoundment lined with flexible geomembrane ~~material with a thickness of at least 10 mils;~~ The liquid is evaporated or removed from the impoundment and taken to a treatment works or landfill authorized to accept the material within:

a. 60 days of the hydrostatic test if the liner is 10 mils, or

b. 180 days of the hydrostatic test if the liner is 30 mils or greater;

2. The liner ~~material~~ is placed over a layer, at least ~~three~~ 3 inches thick, of well-sorted sand or finer grained material, or over an underliner ~~determined by the Department to provide~~ that provides protection equal to or better than sand or finer grained material and the calculated seepage is less than 550 gallons per acre per day;

3. Within 60 days after the end of a hydrostatic test, all test waters are evaporated or removed from the impoundment and taken to a treatment works or landfill approved under 18 A.A.C. 8 to accept the material. Any other methods for removal of the test waters shall be approved in advance by the Department;

~~4.3~~ The liner is removed and disposed of at an approved landfill unless the liner can be reused at another test location without a reduction in integrity; and

~~5.4~~ The test site is restored to its natural grade; and

5. If the test waters are removed using a method not specified in subsection (C)(1), including a discharge under an AZPDES permit, the test waters meet Aquifer Water Quality Standards and the specific method is approved by the Department before the discharge.

D. A 1.04 General Permit allows any discharge from a facility that, for water quality sampling, hydrologic parameter testing, well development, redevelopment, or potable water system maintenance and repair purposes, receives water, drilling fluids, or drill cuttings from a well if the discharge is to the same aquifer in approximately the same location from which the water supply was originally withdrawn, or the discharge is under a ~~National Pollution Discharge Elimination System~~ an

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- AZPDES permit, or both.
- E. A 1.05 General Permit allows a discharge to an injection well, surface impoundment, and leach line to receive a ~~only if the discharge only of is~~ filter backwash from a potable water treatment system, condensate from a refrigeration unit, overflows from an evaporative cooler, heat exchange system return water, or swimming pool filter backwash ~~if and the discharge is less than 1000 gallons per day. The 1.05 General Permit allows a discharge of those sources to a navigable water if the discharge is authorized by an AZPDES permit.~~
- F. A 1.06 General Permit allows the burial of mining industry off-road motor vehicle waste tires at the mine site in a manner consistent with the cover requirements in ~~R18-8-703~~ R18-13-1203.
- G. A 1.07 General Permit allows the operation of dockside facilities and watercraft if the following conditions are met:
1. Docks that service watercraft equipped with toilets provide sanitary facilities at dockside for the disposal of sewage from watercraft toilets. No wastewater from sinks, showers, laundries, baths, or other plumbing fixtures at a dockside facility is discharged into waters of the state;
 2. Docks that service watercraft have conveniently located, toilet facilities for men and women;
 3. No boat, houseboat, or other type of watercraft is equipped with a marine toilet constructed and operated to discharge sewage directly or indirectly into ~~waters a water~~ of the state, nor is any container of sewage placed, left, discharged, or caused to be placed, left, or discharged in or near any ~~water waters~~ of the state by a person;
 4. Watercraft with marine toilets constructed to allow sewage to be discharged directly into waters of the state are locked and sealed to prevent usage. Chemical or other type marine toilets with approved storage containers are permitted if dockside disposal facilities are provided; and
 5. No bilge water or wastewater from sinks, showers, laundries, baths, or other plumbing fixtures on houseboats or other watercraft is discharged into waters of the state.
- H. A 1.08 General Permit allows for any earth pit privy, fixed or transportable chemical toilet, incinerator toilet or privy, or pail or can-type privy ~~authorized~~ if allowed by a county health or environmental department under A.R.S. Title 36 or a delegation agreement under A.R.S. § 49-107.
- I. A 1.09 General Permit allows ~~for a~~:
1. The operation of:
 - a. A sewage treatment facility with flows less than 20,000 gallons per day operating under a general permit and approved by the Department before January 1, 2001; and
 - b. An on-site wastewater treatment facility with flows less than 20,000 gallons per day operating before January 1, 2001;
 2. The person who owns or operates the permitted a facility under subsections (I)(1)(a) or (b) shall to operate the facility if the following conditions are met:
 - ~~1.a. Cause~~ The discharge from the facility does not cause or contribute to a violation of a water quality standard;
 - ~~2.b. Expand the facility to accommodate increased flows;~~ The owner or operator does not expand the facility to accommodate flows above the design flow or 20,000 gallons per day, whichever is less;
 - ~~3.c. Treat flows that are not~~ The facility only treats typical sewage;
 - ~~4.d. Treat~~ The facility does not treat flows from commercial operations using hazardous substances or creating hazardous wastes, as defined in A.R.S. § 49-921(5); ~~or~~
 - ~~5.e. Create~~ The discharge from the facility does not create any environmental nuisance condition listed in A.R.S. § 49-141; ~~or~~
 - f. The owner or operator does not alter the treatment or disposal characteristics of the original facility, except as allowed under R18-9-A309(A)(9)(a).
- J. A 1.10 General Permit allows the operation of a sewage collection system installed before January 1, 2001 that serves downstream from the point where the daily design flow is 3000 gallons per day or that includes a manhole, force main, or lift station serving more than one dwelling regardless of flow, if:
1. The system complies with the performance standards in R18-9-E301(B).
 2. No sewage is released from the sewage collection system to the land surface, and
 3. The system is not operating under the 2.05 General Permit.
- K. A 1.11 General Permit allows the operation of a sewage collection system that serves upstream from the point where the daily design flow is 3000 gallons per day to the building drains, or a single gravity sewer line conveying sewage from a building drain directly to an interceptor, lateral, or manhole, regardless of daily design flow, if all of the following are met:
1. The system does not cause or contribute to an exceedance of a water quality standard established in 18 A.A.C. 11, Articles 1 and 4;
 2. No sewage is released from the sewage collection system to the land surface;
 3. No environmental nuisance condition listed in A.R.S. § 49-141 is created;
 4. The system does not include a manhole, force main, or lift station serving more than one dwelling;
 5. Applicable local administrative requirements for review and approval of design and construction are followed;
 6. The performance standards specified in R18-9-E301(B) are met using:
 - a. Local building and construction codes.

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- b. Relevant design and construction standards specified in R18-9-E301, and
- c. Appropriate operation and maintenance;
- 7. The system flows directly into one of the following downstream facilities:
 - a. An on-site wastewater treatment facility;
 - b. A sewage treatment facility operating under an individual permit; or
 - c. A sewage collection system operating under a 1.10, 2.05, or 4.01 General Permit; and
- 8. The system is not operating under a 2.05 General Permit.
- L. A 1.12 General Permit allows the discharge of wastewater resulting from washing concrete from trucks, pumps, and ancillary equipment to an impoundment if the following conditions are met:
 - 1. The person holds an AZPDES Construction General Permit authorizing the concrete washout activities;
 - 2. The Stormwater Pollution Prevention Plan required by the Construction General Permit issued according to 18 A.A.C. 9, Article 9, Part C, for the construction activity addresses the concrete washout activities;
 - 3. The vegetation at the soil base of the impoundment is cleared, grubbed, and compacted to uniform density not less than 95 percent. If the impoundment is located above grade, the berms or dikes are compacted to a uniform density not less than 95 percent;
 - 4. If groundwater is less than 20 feet below land surface, the impoundment is lined with a synthetic liner at least 30 mils thick;
 - 5. The impoundment is located at least 50 feet from any storm drain inlet, open drainage facility, or watercourse and 100 feet from any water supply well;
 - 6. The impoundment is designed and operated to maintain adequate freeboard to prevent overflow or discharge of wastewater;
 - 7. The concrete washout wastewater from any wash pad is routed to the impoundment;
 - 8. The impoundment receives only concrete washout wastewater;
 - 9. The annual average daily flow of wastewater to the impoundment is less than 3000 gallons per day; and
 - 10. The following closure requirements are met.
 - a. The facility is closed by removing and appropriately disposing of any liquids remaining in the impoundment.
 - b. The area is graded to prevent ponding of water, and
 - c. Closure activities are completed before filing of the Notice of Termination under the AZPDES Construction General Permit.

PART C. TYPE 2 GENERAL PERMITS

R18-9-C301. 2.01 General Permit: Drywells That Drain Areas Where Hazardous Substances Are Used, Stored, Loaded, or Treated

- A. A 2.01 General Permit allows for a drywell that drains an area where hazardous substances are used, stored, loaded, or treated.
- B. Notice of Intent to Discharge. In addition to the requirements in R18-9-A301(B), an applicant shall submit:
 - 1. The Department registration number for the drywell or documentation that a drywell registration form was submitted to the Department;
 - 2. For a drywell constructed ~~before January 1, 2001,~~ more than 90 days before submitting the Notice of Intent to Discharge to the Department, a certification signed, dated, and sealed by an Arizona-registered professional engineer or geologist that a site investigation has concluded ~~either of the following that:~~
 - a. ~~Analytical results from sampling of the drywell settling chamber sediment for pollutants reasonably expected to be present do not exceed either the residential soil remediation levels or the groundwater protection levels; or~~
 - b. ~~Soil borings or groundwater investigations indicate that an Aquifer Water Quality Standard in groundwater beneath the drywell has not been exceeded.~~
 - b. The settling chamber does not contain sediments that could be used to characterize and compare results to soil remediation levels and the chamber has not been cleaned out within the last six months;
 - c. Neither a soil remediation level nor groundwater protection level is exceeded in soil samples collected from a boring drilled within 5 feet of the drywell and sampled in 5-foot increments starting from 5 feet below ground surface and extending to 10 feet below the base of the drywell injection pipe; or
 - d. If coarse grained lithology prevents the collection of representative soil samples in a soil boring, a groundwater investigation demonstrates compliance with Aquifer Water Quality Standards in groundwater at the applicable point of compliance;
 - 3. Design information to demonstrate that the requirements in subsection (C) are satisfied; and
 - ~~3.4. A copy of the Best Management Practices Plan described in subsection (D)(5).~~
- C. Design requirements. An applicant shall:
 - 1. Locate the drywell no closer than 100 feet from a water supply well and 20 feet from an underground storage tank;
 - 2. Clearly mark the drywell ~~"Storm Water Stormwater Only"~~ "Storm Water Stormwater Only" on the surface grate or manhole cover;
 - 3. Locate the bottom of the drywell hole at least 10 feet above ~~the groundwater table.~~ the groundwater table. ~~The applicant shall seal off any~~

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~~zone of perched water above the groundwater table from the drywell following the requirements established under 12 A.A.C. 15, Article 8; and If during drilling and well installation the drywell borehole encounters saturated conditions, the applicant shall backfill the borehole with cement grout to at least 10 feet above the elevation of saturated conditions before constructing the drywell in the borehole;~~

4. Ensure that the drywell design or drainage area design includes a method to remove, intercept, or collect pollutants that may be present at the operation with the potential to reach the drywell. The applicant may include a flow control or pretreatment device, such as an interceptor, sump, or another device or structure designed to remove, intercept, or collect pollutants. The applicant may use flow control or pretreatment devices listed under R18-9-C304(D)(1) or (2) to satisfy the design requirements of this subsection;
5. Record the accurate latitude and longitude of the drywell using a Global Positioning System device or site survey; and
6. Develop and maintain a current site plan showing the location of the drywell, the latitude and longitude coordinates of the drywell, surface drainage patterns, the location of floor drains and French drains plumbed to the drywell, water supply wells, monitor wells, underground storage tanks, and chemical and waste usage, storage, loading, and treatment areas.

D. Operational and maintenance requirements.

1. A permittee shall operate the drywell only for the disposal of ~~storm water~~ stormwater. The permittee shall not release industrial process waters or wastes in the drywell or drywell retention basin drainage area.
2. The permittee shall implement a Best Management Practices Plan for operation of the drywell and control of ~~detrimental practices~~ pollutants in the drywell drainage area.
3. The permittee shall keep the Best Management Practices Plan on-site or at the closest practical place of work and provide the plan to the Department upon request.
4. The permittee may substitute any Spill Prevention Containment and Control Plan, facility response plan, or ~~National Pollutant Discharge Elimination System~~ an AZPDES Storm Water Stormwater Pollution Prevention Plan that meets the requirements of this subsection for a Best Management Practices Plan. If the permittee submits a substitute for the Best Management Practices Plan, the permittee shall identify the conditions within the substitute plan that satisfy the requirements of subsection (D).
5. The Best Management Practices Plan shall include:
 - a. A site plan showing surface drainage patterns and the location of floor drains, water supply, monitor wells, underground storage tanks, and chemical and waste usage, storage, loading, and treatment areas. The site plan shall show surface grading details designed to prevent drainage and spills of hazardous substances from leaving the drainage area and entering the drywell;
 - b. A design plan showing details of drywell design and drainage design, including flow control or pretreatment devices, such as interceptors, sumps, and other devices and structures designed to remove, intercept, and collect ~~pollutants~~ any pollutant that may be present at the operation with the potential to reach the drywell;
 - c. Procedures to prevent and contain spills and minimize discharges to the drywell;
 - d. Operational practices that include routine inspection and maintenance of the drywell and associated pretreatment and flow-control devices, periodic inspection of waste storage facilities, and proper handling of hazardous substances to prevent discharges to the drywell. Routine inspection and maintenance shall include:
 - i. Replacing the adsorbent material in the skimmers, if installed, when the adsorbent capacity is reached;
 - ii. Maintaining valves and associated piping for a drywell injection and treatment system;
 - iii. Maintaining magnetic caps and mats, if installed;
 - iv. Removing sludge from the oil/water separator, if installed, and replacing the filtration or adsorption material to maintain treatment capacity;
 - v. Removing sediment from the catch basin inlet filters and retention basin to maintain required storage capacity; and
 - e. Procedures for periodic employee training on practices required by the Best Management Practices Plan specific to the drywell and prevention of unauthorized discharges.
6. The permittee shall implement waste management practices to prohibit and prevent discharges, other than those exempted in A.R.S. § 49-250(B)(23), in the drywell drainage area, including:
 - a. Maintaining an up-to-date inventory of generated wastes and waste products;
 - b. Disposing or recycling all wastes or solvents through a company licensed to handle the material;
 - c. Where possible, collecting and storing waste in waste receptacles located outside the drywell drainage area. If the permittee collects and stores the waste within the drywell drainage area, the permittee shall collect and store the waste in properly designed receptacles; and
 - d. Using a licensed waste hauler to transport waste off-site to a permitted waste disposal facility.

E. Inspection. A permittee shall:

1. Conduct an annual inspection of the drywell for sediment accumulation in the chambers and the flow-control and treatment systems, and remove sediment annually or when 25 percent of the effective capacity is filled, whichever

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comes first, to restore capacity and ensure that the drywell functions properly. The permittee shall characterize the sediments that are removed from the drywell after inspection and dispose of the sediments according to local, state, and federal requirements; and

2. If the stormwater fails to drain through the drywell within 36 hours, inspect the treatment system and piping to ensure that the treatment system is functioning properly, make repairs, and perform maintenance as needed to restore proper function.

E.F. Recordkeeping. A permittee shall maintain ~~a log book as part of the Best Management Practices Plan that documents drywell maintenance, inspections, employee training, and sampling activities.~~ for at least 10 years, the following documents on-site or at the closest place of work and make the documents available to the Department upon request:

1. Documentation of drywell maintenance, inspections, employee training, and sampling activities;
2. A site plan showing the location of the drywell, the latitude and longitude coordinates of the drywell, surface drainage patterns and the location of floor drains or French drains that are plumbed to the drywell or are used to alter drainage patterns, the location of water supply wells, monitor wells, underground storage tanks, and places where hazardous substances are used, stored, or loaded;
3. A design plan showing details of drywell design and drainage design, including any flow control and pretreatment technologies;
4. An operations and maintenance manual that includes:
 - a. Procedures to prevent and contain spills and minimize any discharge to the drywell and a list of actions and methods proposed to prevent and contain hazardous substance spills or leaks;
 - b. Methods and procedures for inspection, operation, and maintenance activities;
 - c. Procedures for spill response; and
 - d. A description of the employee training program for drywell inspections, operations, maintenance, and waste management practices;
5. Drywell sediment waste characteristics and disposal manifest records for sediments removed during routine inspections and maintenance activities; and
6. Sampling plans, certified laboratory reports, and chain of custody forms for soil, sediment, and groundwater sampling associated with drywell site investigations.

F.G. Spills.

1. ~~The~~ In the event of a spill, the permittee shall; notify the Department within 24 hours of any spill of hazardous substances exceeding the applicable reportable quantity established under 40 CFR 302.4, "Designation of Hazardous Substances," and 40 CFR 302.5, "Determination of Reportable Quantities," July 1, 1999 Edition, into the drywell or of any spill of petroleum products exceeding 25 gallons into the drywell. These regulations are incorporated by reference and do not include any later amendments or editions of the incorporated matter. Copies of the incorporated material are available for inspection at the Arizona Department of Environmental Quality and the Office of the Secretary of State.
 - a. Notify the Department within 24 hours of any spill of hazardous or toxic substance that enters the drywell inlet;
 - b. Contain, clean up, and dispose of, according to local, state, and federal requirements, any spill or leak of a hazardous substance in the drywell drainage area and basin drainage area;
 - c. If a pretreatment system is present, verify that treatment capacity has not been exceeded; and
 - d. If the spill reaches the drywell injection pipe, drill a soil boring within 5 feet of the drywell inlet chamber and sample the soil in 5-foot increments from 5 feet below ground surface to a depth extending at least 10 feet below the base of the injection pipe to determine whether a soil remediation level or groundwater protection level has been exceeded in the subsurface. The permittee shall:
 - i. Submit the results to the Department within 60 days of the date of the spill; and
 - ii. Notify the Department if soil contamination at the facility, not related to the spill, is being addressed by an existing approved remedial action plan.
2. Based on the results of subsection (G)(1)(d), the Director may require the permittee to submit an application for clean closure or an individual Aquifer Protection Permit.

H. Closure and decommissioning requirements.

1. A permittee shall:
 - a. Retain a drywell drilling contractor, licensed under 4 A.A.C. 9, to close the drywell;
 - b. Remove sediments and any drainage component, such as standpipes and screens from the drywell's settling chamber and backfill the injection pipe with cement grout;
 - c. Remove the settling chamber;
 - d. Backfill the settling chamber excavation to the land surface with clean silt, clay, or engineered material. Materials containing hazardous substances are prohibited from use in backfilling the drywell; and

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- e. Mechanically compact the backfill.
- 2. Within 30 days of closure and decommissioning, the permittee shall submit a written verification to the Department that all material that contributed to a discharge has been removed and any reasonable probability of further discharge from the facility and of exceeding any Aquifer Water Quality Standard at the applicable point of compliance has been eliminated to the greatest degree practical. The written verification shall specify:
 - a. The reason for the closure;
 - b. The drywell registration number;
 - c. The general permit reference number;
 - d. The materials and methods used to close the drywell;
 - e. The name of the contractor who performed the closure;
 - f. The completion date;
 - g. Any sampling data;
 - h. Sump construction details, if a sump was constructed to replace the abandoned drywell; and
 - i. Any other information necessary to verify that closure has been achieved.

R18-9-C302. 2.02 General Permit: Intermediate Stockpiles at Mining Sites

- A. A 2.02 General Permit allows for intermediate stockpiles not qualifying as inert material under A.R.S. § 49-201(19) at a mining site.
- B. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge under R18-9-A301(B), an applicant shall submit the construction and operation specifications used to satisfy the requirements in subsection (C)(1).
- C. Design and operational requirements.
 - 1. An applicant shall design, construct, and operate the stockpile so that it does not impound water. An applicant may rely on ~~storm water~~ stormwater run-on controls or facility design features, such as drains, or both.
 - 2. An applicant shall direct storm runoff contacting the stockpile to a mine pit or a facility covered by an individual or general permit.
 - 3. A permittee shall maintain any engineered feature ~~designed to aid compliance with the permit of the facility~~ in good working condition.
 - 4. A permittee shall visually inspect the ~~features described in subsection (C)(1)~~ facility at least quarterly and repair any defect as soon as practical. ~~Any defects noted during the inspection shall be repaired as soon as practical.~~
 - 5. A permittee shall not add hazardous substances to the stockpiled material.
- D. Closure requirements. In addition to the closure requirements in R18-9-A306, the following apply:
 - 1. If an intermediate stockpile covered under ~~this general permit~~ a 2.02 General Permit is permanently closed, a permittee shall remove any remaining material, to the greatest extent practical, and regrade the area to prevent impoundment of water.
 - 2. The permittee shall submit a narrative description of closure measures to the Department within 30 days after closure.

R18-9-C303. 2.03 General Permit: Hydrologic Tracer Studies

- A. A 2.03 General Permit allows for a discharge caused by the performance of tracer studies.
 - 1. ~~This permit~~ The 2.03 General Permit does not authorize the use of any hazardous substance, radioactive material, or any substance identified in A.R.S. § 49-243(I) in ~~any~~ a tracer study.
 - 2. A permittee shall complete a single tracer test ~~shall be completed~~ within two years of the Notice of Intent to Discharge.
- B. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B), an applicant shall submit:
 - 1. A narrative description of the tracer test including the type and amount of tracer used;
 - 2. A Material Safety Data Sheet for the tracer; and
 - 3. Unless the injection or distribution is within the capture zone of an established passive containment system meeting the requirements of A.R.S. § 49-243(G), the following information:
 - a. A narrative description of the impacts that may occur if a solution migrates outside the test area, including a list of downgradient users, if any;
 - b. The anticipated effects and expected concentrations, if possible to calculate; and
 - c. A description of the monitoring, including types of tests and frequency.
- C. Design and operational requirements. A permittee shall:
 - 1. Ensure that injection into ~~wells~~ a well inside the capture zone of an established passive containment system that meets the requirements of A.R.S. § 49-243(G) does not exceed the total depth of the influence of the hydrologic sink;
 - 2. Ensure that injection into ~~wells~~ a well outside the capture zone of an established passive containment system that meets the requirements of A.R.S. § 49-243(G) does not exceed rock fracture pressures during injection of the tracer;
 - 3. Not add a substances to ~~wells~~ a well that ~~are~~ is not compatible with ~~their~~ the well's construction;
 - 4. Ensure that a tracer is compatible with the construction materials at the impoundment if a tracer is placed or collected in an existing impoundment;

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5. ~~Monitor any wells~~ For at least two years, monitor quarterly a well that is hydraulically downgradient of the test site for the tracer for at least two years on a quarterly basis if a tracer is used outside the capture zone of an established passive containment system that meets the requirements of A.R.S. § 49-243(G) and less than 85% percent of the tracer is recovered. ~~This~~ The permittee may adjust this period may be adjusted with the consent of the Department if the applicant can show permittee shows that the hydraulic gradient causes the tracer to reach the monitoring point in a shorter or longer period of time;
 6. Ensure that a tracer does not leave the site in concentrations distinguishable from background water quality; and
 7. Monitor the amount of tracer used and recovered and submit a report summarizing the test and results to the Department within 30 calendar days of test completion.
- D.** Recordkeeping. A permittee shall retain the following information at the site where the facility is located for at least three years after test completion and make it available to the Department upon request.
1. Test protocols,
 2. Material Safety Data Sheet information,
 3. Recovery records, and
 4. A copy of the report submitted to the Department under subsection (C)(7).
- E.** Closure requirements.
1. If a tracer was used outside the capture zone of an established passive containment system that meets the requirements of A.R.S. § 49-243(G), a permittee shall account for any tracer not recovered through attenuation, modeling, or monitoring.
 2. ~~Closure may occur~~ The permittee shall achieve closure immediately following the test, or if the test area is within a pollutant management area defined in an individual permit, at the conclusion of operations.

R18-9-C304. 2.04 General Permit: Drywells that Drain Areas at Motor Fuel Dispensing Facilities Where Motor Fuels Are Used, Stored, or Loaded

- A.** A 2.04 General Permit allows for a drywell that drains an area at a facility for dispensing motor fuel, as defined in A.A.C. R20-2-701(19), including a commercial gasoline station with an underground storage tank.
1. A drywell at a motor fuel dispensing facility using hazardous substances is eligible for coverage under ~~this general permit~~ the 2.04 General Permit.
 2. A drywell at a vehicle maintenance facility owned or operated by a commercial enterprise or by a federal, state, county, or local government is not eligible for coverage under this general permit, unless the facility design ensures that only motor fuel dispensing areas will drain to the drywell. Areas where hazardous substances other than motor fuels are used, stored, or loaded, including service bays, are not covered under ~~this general permit~~ the 2.04 General Permit.
 3. Definition. For purposes of this Section, “hazardous substances” means substances that are components of commercially packaged automotive supplies, such as motor oil, antifreeze, and routine cleaning supplies such as those used for cleaning windshields, but not degreasers, engine cleaners, or similar products.
- B.** Notice of Intent to Discharge. In addition to the requirements in R18-9-A301(B), an applicant shall submit:
- ~~1. An applicant shall provide design information to demonstrate that the requirements in subsection (C) are met.~~
 - ~~2. In addition to the requirements in R18-9-A301(B), an applicant shall submit:~~
 - ~~1.a.~~ The Department registration number for the drywell or documentation that a drywell registration form was submitted to the Department; ~~and~~
 - ~~2.b.~~ For a drywell constructed more than 90 days before submitting the Notice of Intent to Discharge is submitted to the Department, a certification signed, dated, and sealed by an Arizona-registered professional engineer or geologist that a site investigation concluded that: ~~the drywell is marked “Stormwater Only” on the surface grate or manhole cover; and~~
 - ~~a.~~ Analytical results from sampling sediment from the drywell settling chamber sediment for pollutants reasonably expected to be present do not exceed either the residential soil remediation levels or the groundwater protection levels;
 - ~~b.i.~~ The settling chamber does not contain sediment for characterizing and comparison of that could be used to characterize and compare results to soil remediation levels and the chamber has not been cleaned out within the last six months; or
 - ~~ii.~~ Analytical results from sampling of the settling chamber sediment for pollutants reasonably expected to be present do not exceed the residential soil remediation levels or groundwater protection levels; or
 - ~~c.iii.~~ Soil borings indicate that neither Neither a soil remediation level nor groundwater protection level is exceeded in soil beneath the drywell. samples collected from a boring drilled within 5 feet of the drywell and sampled in 5 foot increments starting at a depth of 5 feet below ground surface and extending to a depth of 10 feet below the base of the drywell injection pipe; or
 - ~~d.~~ If coarse grained lithology prevents the collection of soil samples in a soil boring, a groundwater investigation demonstrates compliance with Aquifer Water Quality Standards in groundwater at the applicable point of compliance.

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3. Design information to demonstrate that the requirements in subsection (C) are satisfied.

C. Design requirements.

1. An applicant shall:

- a. Include a flow control or pretreatment device identified in subsections (D)(1) or (2), or both, that removes, intercepts, or collects spilled motor fuel or hazardous substances before stormwater enters the drywell injection pipe;
- b. Calculate the volume of runoff generated in the design storm event and anticipate the maximum potential contaminant release quantity to design the treatment and holding capacity of the drywell;
- c. Follow local codes and regulations to meet retention periods for removing standing water;
- d. Locate the drywell at least 100 feet from a water supply well and 20 feet from an underground storage tank; ~~and~~
- e. Locate the bottom of the drywell injection pipe at least 10 feet above the groundwater table. The applicant shall seal off any zone of perched water above the groundwater table from the drywell injection pipe following the requirements in R12-15-816(I)(1) and (2). If during drilling and well installation the drywell borehole encounters saturated conditions, the applicant shall backfill the borehole with cement grout to a level at least 10 feet above the elevation at which saturated conditions were encountered in the borehole before constructing the drywell in the borehole;
- f. Record the accurate latitude and longitude of the drywell using a Global Positioning System device or site survey and record the location on the site plans;
- g. Clearly mark the drywell "Stormwater Only" on the surface grate or manhole cover;
- h. Develop and maintain a current site plan showing the location of the drywell, the latitude and longitude coordinates of the drywell, surface drainage patterns and the location of floor drains and French drains that are plumbed to the drywell or are used to alter drainage patterns, water supply wells, monitor wells, underground storage tanks, and chemical and waste usage, storage, loading, and treatment areas; and
- i. Prepare design plans showing details of drywell design and drainage design, including one or a combination of pre-approved technologies described in subsections (D)(1) and (2) designed to remove, intercept, and collect any pollutant that may be present at the operation with the potential to reach the drywell.

2. ~~An~~ For an existing drywell, an applicant that cannot meet the design requirements in subsections (C)(1)(d) and (e) shall provide the Department with the date of drywell construction, the depth of the drywell borehole and injection pipe, the distance from the drywell to the nearest water supply well and from the drywell to the underground storage tank, and the depth to the groundwater from the bottom of the drywell injection pipe.

D. Flow control and pretreatment. A permittee shall ensure that motor fuels and other hazardous substances are not discharged to the subsurface. A permittee may use any of the following flow control or pretreatment technologies:

1. Flow control. The permittee shall ensure that motor fuel and hazardous substance spills are removed before allowing stormwater to enter the drywell.
 - a. Normally closed manual or automatic valve. The permittee shall leave a normally closed valve in a closed position except when stormwater is allowed to enter the drywell;
 - b. Raised drywell inlet. The permittee shall:
 - i. Raise the drywell inlet at least 6 inches above the bottom of the retention basin or other storage structure, or install a 6-inch asphalt or concrete raised barrier encircling the drywell inlet to provide a non-draining storage capacity within the retention basin or storage structure for complete containment of a spill; and
 - ii. Ensure that the storage capacity is at least 110 percent of the ~~combined volume of the design storm event required by the local jurisdiction and the maximum releasable quantity of spilled motor fuel and the estimated volume of a potential motor fuel spill based on the facility's past incident reports or incident reports for other facilities that are similar in design;~~
 - c. Magnetic mat or cap. The permittee shall ensure that the drywell inlet is sealed with a mat or cap at all times, except after rainfall or a storm event when the mat or cap is temporarily removed to allow stormwater to enter the drywell; and that the mat or cap is always used with a retention basin or other type of storage;
 - d. Primary sump, interceptor, or settling chamber. The permittee may use a primary sump, interceptor, or settling chamber only in combination with another flow control or pre-treatment technology.
 - i. The permittee shall remove motor fuel or hazardous substances from the sump, interceptor, or chamber before allowing stormwater to enter the drywell.
 - ii. The permittee shall install a settling chamber or sump and allow the suspended solids to settle before stormwater flows into a drywell; install the drywell injection pipe in a separate chamber and connect the sump, interceptor, or chamber to the drywell inlet by piping and valving to allow the stormwater to enter the drywell.
 - iii. The permittee may install fuel hydrocarbon detection sensors in the sump, interceptor, or settling chamber that use flow control to prevent fuel from discharging into the drywell;
2. Pretreatment. The permittee shall prevent the bypass of motor fuels and hazardous substances from the pretreatment system to the drywell during periods of high flow.
 - a. Catch basin inlet filter. The permittee shall:

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- i. Install a catch basin inlet filter to fit inside a catchment drain to prevent motor fuels and hazardous substances from entering the drywell,
 - ii. Ensure that a motor fuel spill or a spill during a high rainfall does not bypass the system and directly release to the drywell injection pipe; and
 - iii. Combine the catch basin inlet filter with a flow control technology to prevent contaminated stormwater from entering the drywell injection pipe;
- b. Combined settling chamber and ~~a~~ an oil/water separator.
 - i. The permittee shall install a system that incorporates a catch basin inlet, a settling chamber, and an oil/water separator.
 - ii. The permittee may incorporate a self-sealing mechanism, such as fuel hydrocarbon detection sensors that activate a valve to ~~cut off~~ cut off flow to the drywell inlet.
- c. Combined settling chamber and oil/water separator, and filter/adsorption. The permittee shall:
 - i. Allow for adequate collection and treatment capacity for solid and liquid separation; and
 - ii. Allow a minimum treated outflow from the system to the drywell inlet of 20 gallons per minute. If a higher outflow rate is anticipated, the applicant shall design a larger collection system with storage capacity.
- d. Passive skimmer.
 - i. If a passive skimmer is used, the permittee shall install sufficient hydrocarbon adsorbent materials, such as pads and socks, or suspend the materials on top of the static water level in a sump or other catchment to absorb the entire volume of expected or potential spill.
 - ii. The permittee may use a passive skimmer only in combination with another flow control or pre-treatment technology.

~~F.~~ Inspection. A permittee shall:

- ~~1. Conduct an annual inspection of the drywell for sediment accumulation in the chambers, and flow control and treatment systems to ensure that the drywell is functioning properly; and~~
- ~~2. If the stormwater fails to drain through the drywell within 36 hours, inspect the treatment system and piping to ensure that it is functioning properly.~~

~~F.E.~~ Operation and maintenance. A permittee shall:

- 1. Operate the drywell only for the subsurface disposal of stormwater;
- 2. Remove or treat any motor fuel or hazardous substance spills;
- 3. Replace the adsorbent material in skimmers, if installed, when the adsorbent capacity is reached;
- 4. Maintain valves and associated piping;
- 5. Maintain magnetic caps and mats, if installed;
- 6. Remove sludge from the oil/water separator and replace the filtration or adsorption materials to maintain treatment capacity;
- 7. Remove sediment from the catch basin inlet filters and retention basins to maintain required storage capacity;
- 8. Remove accumulated sediment from the settling chamber annually or when 25 percent of the effective settling capacity is filled, whichever occurs first; and
- 9. Provide new employee training within one month of hire and annual employee training on how to maintain and operate flow control and pretreatment technology used in the drywell.

~~E.~~ Inspection. A permittee shall:

- 1. Conduct an annual inspection of the drywell for sediment accumulation in the chambers and in the flow control and treatment systems to ensure that the drywell is functioning properly; and
- 2. If the stormwater fails to drain through the drywell within 36 hours, inspect the treatment system and piping to ensure that it is functioning properly, make repairs, and perform maintenance as needed to restore proper function.

~~G.~~ Closure Requirements:

- ~~1. A permittee shall comply with the following closure requirements:~~
 - ~~a. Retain a drywell drilling contractor, licensed under 4 A.A.C. 9, to close the drywell;~~
 - ~~b. Remove sediments and any drainage components, such as stand pipes and screens from the drywell's settling chamber and backfill the injection pipe with cement grout;~~
 - ~~c. Remove the top of the drywell, including the upper settling chamber to a depth of at least six feet below the ground surface. The permittee may use a backhoe or other excavation equipment;~~
 - ~~d. Fill the remaining settling chamber with clean, mechanically compacted silt, clay, similar engineered material, or ABC slurry;~~
 - ~~e. Place a cement grout plug at least two feet thick with the top set at four feet below the ground surface;~~
 - ~~f. Backfill the remainder of the drywell to the land surface with clean silt, clay, or engineered material. Materials containing hazardous substances are prohibited from use in backfilling the drywell; and~~
 - ~~g. Mechanically compact the backfill.~~
- ~~2. If a permittee uses procedures other than those listed in subsection (G)(1) in closure, the permittee shall demonstrate to the Department that those procedures are equivalent to the procedures listed in subsection (G)(1) and will prevent~~

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any fluid migration from the ground surface to an aquifer and obtain approval before implementation;

3. Within 30 days of closure, the permittee shall submit written verification of the closure procedures the permittee used to the Department with the drywell registration number, or a completed registration form. The written verification shall specify:
 - a. The reason for the closure;
 - b. The materials and methods used to abandon the drywell;
 - c. The name of the contractor who performed the closure;
 - d. The completion date;
 - e. Any sampling data collected from the drywell investigation if performed or if required by the Department; and
 - f. Sump construction details, if a sump is constructed to replace the abandoned drywell.
4. The Department may require additional investigations or corrective actions if any of the following conditions exist:
 - a. The permittee has not satisfied the closure requirements in A.A.C. R18-9-A306;
 - b. The permittee provided incorrect or inaccurate information or there is relevant information missing from the permit application or closure reports;
 - c. The permittee has not eliminated discharges from the facility through closure activities; or
 - d. Closure and decommissioning activities have not demonstrated or achieved compliance with aquifer water quality standards.
5. If no motor fuel or hazardous substance spill enters the drywell, the permittee complies with the closure requirements under R18-9-A306 by satisfying the requirements in subsections (G)(1) or (2).
6. If a motor fuel or hazardous substance spill has entered the injection pipe, the permittee shall comply with the requirements in A.R.S. § 49-252, A.A.C. R18-9-A306, and subsection (H)(1)(c) and (2) to close the drywell.

G. Recordkeeping. A permittee shall maintain, for at least 10 years, the following documents on-site or at the closest place of work and make the documents available to the Department upon request:

1. Documentation of drywell maintenance, inspections, employee training, and sampling activities;
2. A site plan showing the location of the drywell, the latitude and longitude coordinates of the drywell, surface drainage patterns and the location of floor drains or French drains that are plumbed to the drywell or are used to alter drainage patterns, water supply wells, monitor wells, underground storage tanks, and places where motor fuel and hazardous substances are used, stored, or loaded;
3. A design plan showing details of drywell design and drainage design, including one or a combination of the pre-approved flow control and pretreatment technologies;
4. An operations and maintenance manual that includes:
 - a. Procedures to prevent and contain spills and minimize any discharge to the drywell and a list of actions and specific methods proposed for motor fuel and hazardous substance spills or leaks;
 - b. Methods and procedures for inspection, operation, and maintenance activities;
 - c. Procedures for spill response; and
 - d. A description of the employee training program for drywell inspections, operations, and maintenance;
5. Drywell sediment waste characterization and disposal manifest records for sediments removed during routine inspections and maintenance activities; and
6. Sampling plans, certified laboratory reports, and chain of custody forms for soil, sediment, and groundwater sampling associated with drywell site investigations.

H. Spills.

1. ~~A~~ In the event of a spill, a permittee shall:
 - a. Notify the Department within 24 hours of any spill of motor fuel or hazardous or toxic substances that enters into the drywell ~~or exceeds the treatment capacity of the pretreatment system inlet;~~
 - b. Contain, ~~cleanup~~ clean up, and dispose of, according to local, state, and federal requirements, any spill or leak of motor fuel ~~and or~~ hazardous substance in the drywell drainage area and basin drainage area; ~~and~~
 - c. ~~If a pretreatment system is present, verify that treatment capacity has not been exceeded; and~~
 - ~~e.d.~~ If the spill reaches the injection pipe, drill a soil boring within five 5 feet of the drywell inlet chamber and sample in five 5-foot increments from 5 feet below ground surface to a depth extending at least 10 feet below the base of the injection pipe to determine whether a soil remediation level or groundwater protection level has been exceeded in the subsurface. The permittee shall:
 - i. Submit the results to the Department within 60 days of the date of the spill; and
 - ii. Notify the Department if soil contamination at the facility, not related to the spill, is being addressed by an existing approved remedial action plan.
2. ~~The Department Director may, based on the results of subsection (H)(1)(d), require additional investigations or corrective actions based on its assessment of whether an exceedance of a soil remediation level or groundwater protection level in the soil boring poses a risk of noncompliance with human health or water quality standards the permittee to submit an application for clean closure or an individual Aquifer Protection Permit.~~

I. Recordkeeping. A permittee shall maintain for at least 10 years, the following documents on-site, or at the closest practi-

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each place of work, and make the documents available to the Department upon request:

1. A log book that documents drywell maintenance, inspections, employee training, and sampling activities;
2. A site plan showing surface drainage patterns and the location of floor drains, water supply wells, monitor wells, underground storage tanks, and places where motor fuel and hazardous substances are used, stored, or loaded;
3. A design plan showing details of drywell design and drainage design, including one or a combination of the pre-approved flow control and pretreatment technologies; and
4. An operations and maintenance manual that includes:
 - a. Procedures to prevent and contain spills and minimize discharges to the drywell and a list of actions and specific methods that will be used for motor fuel and hazardous substance spills or leaks;
 - b. A method and procedures for inspection and operation and maintenance activities;
 - c. The procedure for spill response; and
 - d. A description of the employee training program.

L. Closure and decommissioning requirements.

1. A permittee shall:
 - a. Retain a drywell drilling contractor, licensed under 4 A.A.C. 9, to close the drywell;
 - b. Remove sediments and any drainage component, such as standpipes and screens from the drywell's settling chamber and backfill the injection pipe with cement grout;
 - c. Remove the settling chamber;
 - d. Backfill the settling chamber excavation to the land surface with clean silt, clay, or engineered material. A permittee shall not use materials containing hazardous substances in backfilling the drywell; and
 - e. Mechanically compact the backfill.
2. Within 30 days of closure and decommissioning, the permittee shall submit a written verification to the Department that all material that contributed to a discharge has been removed and any reasonable probability of further discharge from the facility and of exceeding any Aquifer Water Quality Standard at the applicable point of compliance has been eliminated to the greatest degree practical. The written verification shall specify:
 - a. The reason for the closure;
 - b. The drywell registration number;
 - c. The general permit reference number;
 - d. The materials and methods used to close the drywell;
 - e. The name of the contractor who performed the closure;
 - f. The completion date;
 - g. Any sampling data;
 - h. Sump construction details, if a sump was constructed to replace the abandoned drywell; and
 - i. Any other information necessary to verify that closure has been achieved.

R18-9-C305. 2.05 General Permit: Capacity, Management, Operation, and Maintenance of a Sewage Collection System

- A. Definition.** For purposes of this Section, "imminent and substantial threat to public health or the environment" means when:
1. The volume of a release is more than 2000 gallons; or
 2. The volume of a release is more than 50 gallons but less than 2000 gallons and any one of the following apply:
 - a. The release entered onto a recognized public area and members of the public were present during the release or before the release was mitigated;
 - b. The release occurred on a public or private street and pedestrians were at risk of being splashed by vehicles during the release or before the release was mitigated;
 - c. The release entered a perennial stream, an intermittent stream during a time of flow, a waterbody other than an ephemeral stream, a normally dry detention or sedimentation basin, or a drywell;
 - d. The release occurred within an occupied building due to a condition in the permitted sewage collection system; or
 - e. The release occurred within 100 feet of a school or a public or private drinking water supply well.
- B.** A 2.05 General Permit allows a permittee to manage, operate, and maintain a sewage collection system under the terms of a CMOM Plan that complies with subsection (D). The Department considers a sewage collection system operating in compliance with an AZPDES permit that incorporates provisions for capacity, management, operation, and maintenance of the system to comply with the provisions of the 2.05 General Permit regardless of whether a Notice of Intent to Discharge for the system was submitted to the Department.
- C. Notice of Intent to Discharge.** In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B), an applicant shall submit:
1. The name and ownership of any downstream sewage collection system and sewage treatment facility that receives sewage from the applicant's sewage collection system;
 2. A map of the service area for which general permit coverage is sought, showing streets and sewage service bound-

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aries for the sewage collection system:

3. A statement indicating that the CMOM Plan is in effect and the principal officer or ranking elected official of the sewage collection system has approved the plan; and
4. A statement indicating whether a local ordinance requires an on-site wastewater treatment facility to hookup to the sewage collection system.

D. CMOM Plan.

1. A permittee shall continuously implement a CMOM Plan for the sewage collection system under the permittee's ownership, management, or operational control. The CMOM Plan shall include information to comply with subsection (E)(1) and instructions on:
 - a. How to properly manage, operate, and maintain all parts of the sewage collection system that are owned or managed by the permittee or under the permittee's operational control, to meet the performance requirements in R18-9-E301(B);
 - b. How to maintain sufficient capacity to convey the base flows and peak wet weather flow of a 10-year, 24-hour storm event for all parts of the collection system owned or managed by the permittee or under the permittee's operational control;
 - c. All reasonable and prudent steps to minimize infiltration to the sewage collection system;
 - d. All reasonable and prudent steps to stop all releases from the collection system owned or managed by the permittee or under the permittee's operational control; and
 - e. The procedure for reporting releases described in subsection (F).
2. The permittee shall maintain and update the CMOM Plan for the duration of this general permit and make it available for Department and public review.
3. If the Department requests the CMOM Plan and upon review finds that the CMOM Plan is deficient, the Department shall:
 - a. Notify the permittee in writing of the specific deficiency and the reason for the deficiency, and
 - b. Establish a deadline of at least 60 days to allow the permittee to correct the deficiency and submit the amended provision to the Department for approval.

E. Sewage release response determination. If the sewage collection system releases sewage, the Director shall consider any of the following factors in determining compliance:

1. Sufficiency of the CMOM Plan.
 - a. The level of detail provided by the CMOM Plan is appropriate for the size, complexity, and age of the system;
 - b. The level of detail provided by the CMOM Plan is appropriate considering geographic, climatic, and hydrological factors that may influence the sewage collection system;
 - c. The CMOM Plan provides schedules for the periodic preventative maintenance of the sewage collection system, including cleaning of all reaches of the sewage collection system below a specified pipe diameter.
 - i. The CMOM Plan may allow inspection of sewer lines by Closed Circuit Television (CCTV) and postponement of cleaning to the next scheduled cleaning cycle if the CCTV inspection indicated that cleaning of a reach of the sewer is not needed.
 - ii. The CMOM Plan may specify inspection and cleaning schedules that differ according to pipe diameter or other characteristics of the sewer;
 - d. The CMOM Plan identifies components of the sewage collection system that have insufficient capacity to convey, when properly maintained, the peak wet weather flow of a 10-year, 24-hour storm event. For those identified components, a capital improvement plan exists for achieving sufficient wet weather flow capacity within ten years of the effective date of permit coverage;
 - e. The CMOM Plan includes an overflow emergency response plan appropriate to the size, complexity, and age of the sewage collection system considering geographic, climatic, and hydrological factors that may influence the system;
 - f. The CMOM Plan establishes a procedure to investigate and enforce against any commercial or industrial entity whose flows to the sewage collection system have caused or contributed to a release;
 - g. The CMOM Plan adequately addresses management of flows from upstream sewage collection systems not under the ownership, management, or operational control of the permittee; or
 - h. Any other factor necessary to determine if the CMOM Plan is sufficient;
2. Compliance with the CMOM Plan.
 - a. The permittee's response to releases as established in the overflow emergency response plan, including whether:
 - i. Maintenance staff responds to and arrive at the release within the time period specified in the plan;
 - ii. Maintenance staff follow all written procedures to remove the cause of the release;
 - iii. Maintenance staff contain, recover, clean up, disinfect, and otherwise mitigate the release of sewage; and
 - iv. Required notifications to the Department, public health agencies, drinking water suppliers, and the public are provided;
 - b. The permittee's activities and timeliness in:

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- i. Implementing specified periodic preventative maintenance measures;
 - ii. Implementing the capital improvement plan; and
 - iii. Investigating and enforcing against an upstream sewage collection system, not under the ownership and operational control of the permittee, if those systems are impediments to the proper management of flows in the permittee's sewage collection system; or
 - c. Any other factor necessary to determine CMOM Plan compliance;
 3. Compliance with the reporting requirements in subsection (F) and the public notice requirements in subsection (G); or
 4. The release substantially endangers public health or the environment.
- E. Reporting requirements.**
 1. Sewage releases.
 - a. A permittee shall report to the Department, by telephone, facsimile, or on the applicable notification form on the Department's Internet web site, any release that is an imminent and substantial threat to public health or the environment as soon as practical, but no later than 24 hours of becoming aware of the release.
 - b. A permittee shall submit a report to the Department within five business days after becoming aware of a release that is an imminent and substantial threat to public health or the environment. The report shall include:
 - i. The location of the release;
 - ii. The sewage collection system component from which the release occurred;
 - iii. The date and time the release began, was stopped, and when mitigation efforts were completed;
 - iv. The estimated number of persons exposed to the release, the estimated volume of sewage released, the reason the release is considered an imminent and substantial threat to public health or the environment if the volume is 2000 gallons or less, and where the release flowed;
 - v. The efforts made by the permittee to stop, contain, and clean up the released material;
 - vi. The amount and type of disinfectant applied to mitigate any associated public health or environmental risk; and
 - vii. The cause of the release or effort made to determine the cause and any effort made to help prevent a future reoccurrence.
 2. Annual report. The permittee shall:
 - a. Submit an annual report to the Department postmarked no later than March 1. The report shall:
 - i. Tabulate all releases of more than 50 gallons from the permitted sewage collection system;
 - ii. Provide the date of any release that is an imminent and substantial threat to public health or the environment; and
 - iii. For other reportable releases under subsection (F)(2)(a)(i), provide the information in subsection (F)(1)(b);
 - b. Provide an amended map of the service area boundaries if, during the calendar year, any area was removed from the service area or if any area was added to the service area that the permittee wishes to include under the 2.05 General Permit and associated CMOM Plan.
- G. Public notice. The permittee shall:**
 1. Post a notice, in a format approved by the Department, at any location where there were more than three reportable releases under subsection (F)(2)(a) from the sewage collection system during any 12-month period.
 2. Include within the notice a warning that identified the releases or potential releases at the location and potential health hazards from any release.
 3. Post the notice at a place where the public is likely to come in contact with the release, and
 4. Maintain the postings until no releases from the location are reported for at least 12 months from the last release and the permittee followed all actions specified in the CMOM Plan to prevent releases at that location during the period.

R18-9-C306. 2.06 General Permit: Fish Hatchery Discharge to a Perennial Surface Water

- A. A 2.06 General Permit allows a fish hatchery to discharge to a perennial surface water if Aquifer Water Quality Standards are met at the point of discharge and the fish hatchery is operating under a valid AZPDES permit.**
- B. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B), an applicant shall provide:**
 1. The applicable AZPDES permit number;
 2. A description of the facility; and
 3. A laboratory report characterizing the wastewater discharge, including the analytical results for all numeric Aquifer Water Quality Standards under R18-11-406.
- C. Design and operational requirements. An applicant shall:**
 1. Collect a representative sample of the discharge to demonstrate compliance with all numeric Aquifer Water Quality Standards and make the results available to the Department upon request, and
 2. Maintain a record of the average and daily flow rates and make it available to the Department upon request.

PART D. TYPE 3 GENERAL PERMITS

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R18-9-D301. 3.01 General Permit: Lined Impoundments

- A.** A 3.01 General Permit allows a lined surface impoundment and a lined secondary containment structure. A permittee shall:
1. Ensure that inflow to the lined surface impoundment or lined secondary containment structure does not contain organic pollutants identified in A.R.S. § 49-243(I);
 2. Ensure that inflow to the lined surface impoundment or lined secondary containment structure is from one or more of the following sources:
 - a. ~~Evaporative cooler overflow, condensate from a refrigeration unit, or swimming pool filter backwash in excess of 1000 gallons per day;~~
 - b. Wastewater that does not contain sewage, temporarily stored for short periods of time due to process upsets or rainfall events, provided the wastewater is promptly removed from the facility as required under subsection (D)(5). Facilities that continually contain wastewater as a normal function of facility operations are not covered under this general permit;
 - c. ~~Storm water~~ Stormwater runoff that is not permitted under A.R.S. § 49-245.01 because the facility does not receive solely ~~storm water~~ stormwater or because the runoff is regulated but not considered stormwater under the Clean Water Act ~~but is not considered storm water under the Act;~~
 - d. Emergency fire event water;
 - e. Wastewater from air pollution control devices at asphalt plants if the wastewater is routed through a sedimentation trap or sump and an oil/water separator before discharge;
 - f. Non-contact cooling tower blowdown and non-contact cooling water, except discharges from electric generating stations with more than 100 megawatts generating capacity;
 - g. Boiler blowdown;
 - h. Wastewater derived from a potable water treatment system, including clarification sludge, filtration backwash, lime and lime-softening sludge, ion exchange backwash, and reverse osmosis spent waste;
 - i. Wastewater from food washing;
 - j. Heat exchanger return water ~~in excess of 1000 gallons per day;~~ and
 - k. Wastewater from industrial laundries;
 - l. Hydrostatic test water from a pipeline, tank, or appurtenance previously used for transmission of fluid;
 - m. Wastewater treated through an oil/water separator before discharge; and
 - n. Cooling water or wastewater from food processing.
- B.** Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B), an applicant shall submit:
1. A listing and description of all sources of inflow;
 2. A representative chemical analysis of each expected source of inflow. If a sample is not available before facility construction, a permittee shall provide the chemical analysis of each inflow to the Department within 60 days of each inflow to the facility;
 3. A narrative description of how the conditions of this general permit ~~is~~ are satisfied. The narrative shall include a Quality Assurance/Quality Control program for liner installation, impoundment maintenance and repair, and impoundment operational procedures; and
 4. A contingency plan that specifies actions ~~to be taken~~ proposed in case of an accidental release from the facility, overtopping of the impoundment, ~~or~~ breach of the berm, and or unauthorized inflows into the impoundment or containment structure.
- C.** Design and installation requirements. An applicant shall:
1. Design and construct surface water controls. ~~The applicant shall to:~~
 - a. Ensure that the impoundment or secondary containment structure maintains, using design volume or mechanical systems, normal operating volumes, if any, and any inflow from the 100-year, 24-hour storm event. The facility shall maintain ~~two~~ at least 2 feet of freeboard or an alternative level of freeboard that the applicant demonstrates is reasonable, considering the size of the impoundment and meteorologic and other site-specific factors; and
 - b. Direct any surface water run-on from the 100-year 24-hour storm event around the facility if not intended for capture by facility ~~design around the facility;~~
 2. Ensure that the facility design accommodates any significant geologic hazard, addressing static and seismic stability. The applicant shall document any design adjustments made for this reason in the Notice of Intent to Discharge;
 3. Ensure that site preparation includes, as appropriate, clearing the area of vegetation, grubbing, grading, and embankment; and subgrade preparation. The applicant shall ensure that supporting surface slopes and foundation are stable and structurally sound; and
 4. ~~Impoundment~~ Comply with the following impoundment lining requirements. ~~The applicant shall:~~
 - a. ~~Ensure~~ If a synthetic liner is used, ensure that the liner is at least a 30-mil geomembrane liner or a 60-mil liner if High Density Polyethylene ~~is used,~~ or an alternative, and that the liner's calculated seepage rate is less than 550 gallons per acre per day, and:

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- ~~i. If a synthetic liner is used, the applicant shall anchor~~ Anchor the liner by securing it in an engineered anchor trench; ~~and~~
 - ~~ii. The applicant shall ensure~~ Ensure that the liner is ultraviolet resistant if it is regularly exposed to sunlight; ~~and~~
 - ~~iii. Ensure that the liner is constructed of a material that is chemically compatible with the wastewater or impounded solution and is not affected by corrosion or degradation;~~
 - b. If a soil liner is used;
 - ~~i. ensure~~ Ensure that it resists swelling, shrinkage, and cracking ~~and that the liner's calculated seepage rate is less than 550 gallons per acre per day. The applicant shall;~~
 - ~~i-ii.~~ Ensure that the soil is at least one 1-foot thick and compacted to a uniform density of 95% percent to meet the "Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effect (12,400 ft-lbf/ft³), D698-00a 1," (2000) (D-698-91), published by the American Society for Testing and Materials; reapproved 1998. This material is incorporated by reference and does not include any later amendments or editions of the incorporated matter material. Copies of the incorporated material are available for inspection at the Arizona Department of Environmental Quality, 1110 W. Washington, Phoenix, AZ 85007 and the Office of the Secretary of State, or may be obtained from the American Society for Testing and Materials International, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959; and
 - ~~ii-iii.~~ Upon installation, protect the soil liner to prevent dessication; and
 - c. For new facilities, develop and implement a construction Quality Assurance/Quality Control program that addresses site and subgrade preparation, inspection procedures, field testing, laboratory testing, and final inspection after construction of the liner to ensure functional integrity.
- D. Operational requirements. A permittee shall:
 1. Maintain sufficient freeboard to manage the 100-year, 24-hour storm event ~~plus two~~ including at least 2 feet of freeboard under normal operating conditions. Management of the 100-year, 24-hour storm event may be through design, pumping, or a combination of both;
 2. Remove accumulated residues, sediments, debris, and vegetation to maintain the integrity of the liner ~~material~~ and the design capacity of the impoundment;
 3. Perform and document a visual inspection for damage to the liner ~~material~~ and for accumulation of residual material at least monthly. The operator shall conduct an inspection within 72 hours after the facility receives a significant volume of ~~storm water~~ stormwater inflow;
 4. Repair damage to the liner by following the Quality Assurance/Quality Control Plan required under subsection (B)(3); and
 5. Remove all inflow from the impoundment as soon as practical, but no later than 60 days after a temporary event; for facilities designed to contain inflow only for temporary events, such as process upsets.
- E. Recordkeeping. A permittee shall maintain at the site, the following information for at least 10 years and make it available to the Department upon request:
 1. Construction drawings and as-built ~~drawings~~ plans, if available;
 2. A log book or similar documentation to record inspection results, repair and maintenance activities, monitoring results, and facility closure;
 3. Capacity design criteria;
 4. A list of standard operating procedures;
 5. The construction Quality Assurance/Quality Control program documentation; and
 6. Records of any inflow into the impoundment other than those permitted by this Section.
- F. Reporting requirements.
 1. If the liner ~~is breached~~ leaks, as evidenced by a drop in water level not attributable to evaporation, or if the ~~impoundment berm~~ breaches or an impoundment is overtopped due to a catastrophic or other significant event, the permittee shall report the circumstance to the Department within five days of discovery and implement the contingency plan required in subsection (B)(4). The permittee shall submit a final report to the Department within 60 days of the event summarizing the circumstances of the problem and corrective actions taken.
 2. The permittee shall report unauthorized flows into the impoundment to the Department within five days of discovery and implement the contingency plan required in subsection (B)(4).
- G. Closure requirements. The permittee shall notify the Department of the intent to close the facility permanently. Within 90 days following closure notification the permittee shall comply with the following requirements, as applicable:
 1. Remove liquids and any solid residue on the liner ~~material~~ and dispose ~~of it~~ appropriately;
 2. Inspect the liner ~~material~~ for evidence of holes, tears, or defective seams that could have leaked;
 3. If evidence of leakage is discovered, remove the liner in the area of suspected leakage and sample potentially impacted soil. If soil remediation levels are exceeded, the permittee shall define the lateral and vertical extent of contamination and, within 60 days of the exceedance, notify the Department and submit an action plan for achieving clean closure for the Department's approval before implementing the plan;

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4. If there is no evidence of holes, tears, or defective seams that could have leaked:
 - a. Cover the liner in place or remove it for disposal or reuse if the impoundment is an excavated impoundment,
 - b. Remove and dispose of the liner elsewhere if the impoundment is bermed, and
 - c. Grade the facility to prevent the impoundment of water; and
5. Notify the Department within 60 days following closure that the action plan ~~has been~~ was implemented and the closure is complete.

R18-9-D302. 3.02 General Permit: Process Water Discharges from Water Treatment Facilities

- A. A 3.02 General Permit allows filtration backwash and discharges obtained from sedimentation and coagulation in the water treatment process from facilities that treat water for industrial process or potable uses. The permittee shall ensure that:
 1. Liquid fraction. The discharge ~~shall meet~~ meets:
 - a. ~~all~~ All numeric Aquifer Water Quality Standards for inorganic chemicals, organic chemicals, and pesticides established in R18-11-406(B) through (D);
 - 2-b. The discharge ~~shall meet~~ meets one of the following criteria for microbiological contaminants:
 - a- A fecal coliform limit, using the membrane filter technique, of two colony forming units per 100 ml (seven sample median) and a single sample maximum limit of 23 colony forming units per 100 ml, or equivalent numbers using the multiple tube fermentation method; or
 - b- A seven sample median limit of 200 colony forming units per 100 ml and a single sample maximum limit of 800 colony forming units per 100 ml for fecal coliform, provided the average daily flow processed by the water treatment facility is less than 250,000 gallons.
 - i. Either the concentration of fecal coliform organisms is not more than 2/100 ml or the concentration of *E. coli* bacteria is not more than 1/100 ml, or
 - ii. Either the concentration of fecal coliform organisms is less than 200/100 ml or the concentration of *E. coli* bacteria is less than 126/100 ml if the average daily flow processed by the water treatment facility is less than 250,000 gallons; and
 2. Solid Fraction. The solid material in the discharge qualifies as inert material, as defined in A.R.S. § 49-201(19).
 - B. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B), an applicant shall submit:
 1. A characterization of the discharge, including a representative chemical and biological analysis of expected discharges and all source waters; and
 2. The design capacity of any impoundment covered by this general permit.
 - C. ~~Design~~ Impoundment design and siting requirements. An applicant shall:
 1. Ensure that the depth to the static groundwater table is greater than 20 feet;
 2. Not locate the area of discharge immediately above karstic or fractured bedrock, unless the discharge meets the microbial limits specified in subsection (A)(1)(b)(i);
 3. Maintain a minimum horizontal setback of 100 feet between the facility and any water supply well;
 4. Design and construct an impoundment, ~~used to manage process water discharges,~~ to maintain, using design volume or mechanical systems, normal operating volumes, ~~if any,~~ and any inflow from the 100-year, 24-hour storm event ~~or may discharge to surface water under the conditions of a National Pollution Discharge Elimination System permit.~~
The applicant shall:
 - a. Divert any surface water run-on from the 100-year, 24-hour storm event around the facility if not intended for capture by facility design; and
 - ~~a-b.~~ Design the facility to maintain ~~two~~ 2 feet of freeboard or an alternative level of freeboard that the applicant demonstrates is reasonable, considering meteorological factors, the size of the impoundment, ~~meteorologic,~~ and other site-specific factors; and or
 - b- ~~Divert any surface water run-on from the 100-year, 24-hour storm event not intended for capture by facility design around the facility.~~
 - c. Discharge to surface water under the conditions of an AZPDES permit; and
 5. Manage off-site disposal of ~~sludges~~ sludge according to A.R.S. Title 49, Chapter 4.
 - D. Operational requirements.
 1. Inorganic chemical, organic chemical, and pesticide monitoring:
 - a. The permittee shall monitor any discharge annually to determine compliance with the requirements of subsection ~~(A)(1)~~ (A).
 - b. If the concentration of any ~~constituent~~ pollutant exceeds the numeric Aquifer Water Quality Standard, the permittee shall submit a report to the Department with a proposal for mitigation and shall increase monitoring frequency for that pollutant to quarterly.
 - c. If, in the quarterly sampling, the condition in subsection (D)(1)(b) ~~persists~~ continues for two ~~additional~~ consecutive quarters, the permittee shall submit an application for an individual permit.
 2. Microbiological ~~contaminants~~ contaminant monitoring:

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- a. The permittee shall monitor any discharge annually to determine compliance with the requirements of subsection ~~(A)(2)~~ (A)(1)(b).
 - b. If the concentration of any ~~constituent~~ pollutant exceeds the limits established in subsection ~~(A)(2)~~ (A)(1)(b), the permittee shall submit a report to the Department with a proposal for mitigation and increase monitoring frequency for that pollutant to monthly.
 - c. If, in the monthly sampling, the condition in subsection (D)(2)(b) ~~persists~~ continues for three ~~additional~~ consecutive months, the permittee shall submit an application for an individual permit.
- E. Recordkeeping. A permittee shall maintain at the site, the following information, if applicable for the disposal method, for at least 10 year, and make it available to the Department upon request:
- 1. Construction drawings and as-built ~~drawings~~ plans, if available;
 - 2. A log book or similar documentation to record inspection results, repair and maintenance activities, monitoring results, and facility closure;
 - 3. Water quality data collected under subsection (D);
 - 4. Standard operating procedures; and
 - 5. Records of any discharge other than those identified ~~by~~ under subsection (B).
- F. Reporting requirements. The permittee shall:
- 1. ~~report~~ Report unauthorized flows into the impoundment to the Department within five days of discovery; and
 - 2. Submit the report required in subsections (D)(1)(b) or (2)(b) within 30 days of receiving the analytical results.

R18-9-D303. 3.03 General Permit: Vehicle and Equipment Washes

- A. A 3.03 General Permit allows a facility ~~that discharges to discharge~~ water from washing vehicle exteriors and vehicle equipment. ~~This general permit~~ The 3.03 General Permit does not authorize:
- 1. Discharge water that typically results from the washing of vehicle engines unless the discharge is to a lined surface impoundment;
 - 2. Direct discharges of sanitary sewage, vehicle lubricating oils, antifreeze, gasoline, paints, varnishes, solvents, pesticides, or fertilizers;
 - 3. Discharges resulting from washing the interior of vessels used to transport fuel products or chemicals, or washing equipment contaminated with fuel products or chemicals; or
 - 4. Discharges resulting from washing the interior of vehicles used to transport mining concentrates that originate from the same mine site, unless the discharge is to a lined surface impoundment.
- B. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B), an applicant shall submit a narrative description of the facility and a design of the disposal system and wash operations.
- C. Design, installation, and testing requirements. An applicant shall:
- 1. Design and construct the wash pad:
 - a. To drain and route wash water to a sump or similar sediment-settling structure and an oil/water separator or a comparable pretreatment technology;
 - b. Of concrete or material chemically compatible with the wash water and its constituents; and
 - c. To support the maximum weight of the vehicle or equipment being washed with an appropriate safety factor;
 - 2. Not use unlined ditches or natural channels to convey wash water;
 - 3. Ensure that a surface impoundment meets the requirements in R18-9-D301(C)(1) ~~and through (C)(3)~~ (3). The applicant shall ensure that berms or dikes at the impoundment can withstand wave action erosion and are ~~adequately~~ compacted to a uniform density not less than 95% percent;
 - 4. Ensure that a surface impoundment required for wash water described in subsection (A)(1) meets design and installation requirements in R18-9-D301(C);
 - 5. If wash water is received by an unlined surface impoundment or engineered subsurface disposal system, the applicant shall:
 - a. Ensure that the annual daily average flow is less than 3000 gallons per day;
 - b. Maintain a minimum horizontal setback of 100 feet between the impoundment or subsurface disposal system and any water supply well;
 - c. Ensure that the bottom of the surface impoundment or subsurface disposal system is at least 50 feet above the static groundwater level and the intervening material does not consist of karstic or fractured ~~bedrock~~ rock;
 - d. Ensure that the wash water receives primary treatment before discharge through, at a minimum, a sump or similar structure for settling sediments or solids and an oil/water separator or a comparable pretreatment technology designed to reduce oil and grease in the wastewater to 15 mg/l or less;
 - e. Withdraw the separated oil from the oil/water separator using equipment such as adjustable skimmers, automatic pump-out systems, or level sensing systems to signal manual pump-out; and
 - f. If a subsurface disposal system is used, design the system to prevent surfacing of the wash water.
- D. Operational requirements. The permittee shall:
- 1. Inspect the oil/water separator before operation to ensure that there are no leaks and that the oil/water separator is in operable condition;

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2. Inspect the entire facility at least quarterly. The inspection shall, at a minimum, consist of a visual examination of the wash pad, the sump or similar structure, the oil/water separator, and all surface impoundments;
 3. Visually inspect each surface impoundment at least monthly, to ensure the volume of wash water is maintained within the design capacity and freeboard limitation;
 4. Repair damage to the integrity of the wash pad or impoundment liner as soon as practical;
 5. Maintain the oil/water separator to achieve the operational performance of the separator;
 6. Remove accumulated sediments in all surface impoundments to maintain design capacity; and
 7. Use best management practices to minimize the introduction of chemicals not typically associated with the wash operations. Only biodegradable surfactant or soaps are allowed. ~~Products~~ The permittee shall not use products that contain chemicals in concentrations likely to cause a violation of an Aquifer Water Quality Standard at the applicable point of compliance are prohibited.
- E. Monitoring requirements.
1. If wash water is discharged to an unlined surface impoundment or other area for subsurface disposal, the permittee shall monitor the wash water quarterly at the point of discharge for pH and for the presence of C₁₀ through C₃₂ hydrocarbons using a Department of Health Services certified method.
 2. If pH is not between 6.0 and 9.0 or the concentration of C₁₀ through C₃₂ hydrocarbons exceeds 50 mg/l, the permittee shall, within 30 days of the monitorings, submit a report to the Department with a proposal for mitigation and shall increase monitoring frequency to monthly.
 3. If the condition in subsection (E)(2) persists for three ~~additional~~ consecutive months, the permittee shall, within 90 days, submit an application for an individual permit.
- F. Recordkeeping. A permittee shall maintain the following information for at least 10 years and make it available to the Department upon request:
1. Construction drawings and as-built ~~drawings~~ plans, if available;
 2. A log book or similar documentation to record inspection results, repair and maintenance activities, monitoring results, and facility closure; and
 3. The Material Safety Data Sheets for the chemicals used in the wash operations and any required monitoring results.
- G. Closure requirements. A permittee shall comply with the closure requirements specified in R18-9-D301(G) if a liner has been used. If no liner is used the permittee shall remove and appropriately dispose of any liquids and grade the facility to prevent impoundment of water.

R18-9-D304. 3.04 General Permit: ~~Non-storm Water~~ Stormwater Impoundments at Mining Sites

- A. A 3.04 General Permit allows discharges to lined surface impoundments, lined secondary containment structures, and associated lined conveyance systems at mining sites.
1. ~~A discharge may include one or more of the following~~ The following discharges are allowed under the 3.04 General Permit:
 - a. Seepage from tailing impoundments, unleached rock piles, or process areas;
 - b. Process solution temporarily stored for short periods of time due to process upsets or rainfall, provided the solution is promptly removed from the facility as required under subsection (D);
 - c. ~~Storm water~~ Stormwater runoff not permitted under A.R.S. § 49-245.01 because the facility does not receive solely ~~storm water~~ stormwater or because the runoff is regulated but not considered stormwater under the Clean Water Act ~~and is not considered storm water under the Act~~; and
 - d. Wash water specific to sand and gravel operations not covered by R18-9-B301(A).
 2. Facilities that continually contain process solution as a normal function of facility operations are not eligible for coverage under ~~this general permit~~ the 3.04 General Permit. If a normal process solution contains a pollutant regulated under A.R.S. § 49-243(I) ~~this general permit~~ the 3.04 General Permit does not apply if the pollutant will compromise the integrity of the liner.
- B. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B), an applicant shall submit:
1. A description of the sources of inflow to the facility. An applicant shall include a representative chemical analysis of expected sources of inflow to the facility unless a sample is not available, before facility construction, in which case the applicant shall provide a chemical analysis of solution present in the facility to the Department within 90 days after the solution first enters the facility;
 2. Documentation demonstrating that ~~plans~~ the facility design and operation under subsections (C) and (D) have been reviewed by a mining engineer or an Arizona-registered professional engineer before submission to the Department; and
 3. A contingency plan that specifies actions ~~to be taken~~ proposed in case of an accidental release from the facility, overtopping of the impoundment, ~~or~~ breach of the berm, and or unauthorized inflows into the impoundment or containment structure.
- C. Design, construction, and installation requirements. An applicant shall:

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1. Design and construct the impoundment or secondary containment structure as specified under R18-9-D301(C)(1);
 2. Ensure that conveyance systems are capable of handling the peak flow from the 100-year storm;
 3. Construct the liner as specified in R18-9-D301(C)(4)(a);
 4. Develop and implement a Quality Assurance/Quality Control program that meets or exceeds the liner manufacturer's guidelines. The program shall address site and subgrade preparation, inspection procedures, field testing, laboratory testing, repair of seams during installation, and final inspection of the completed liner for functional integrity;
 5. If the facility is located in the 100-year flood plain, design the facility so it is protected from damage or flooding as a result of a 100-year, 24-hour ~~peak streamflows~~ storm event;
 6. Design and manage the facility so groundwater does not come into contact with the liner;
 7. Ensure that the facility ~~design accommodates~~ addresses any significant geologic hazard ~~addressing~~ relating to static and seismic stability. The applicant shall document any design adjustments made for this reason in the Notice of Intent to Discharge;
 8. Ensure that the site preparation includes, as appropriate, clearing the area of vegetation, grubbing, grading, and embankment; and subgrade preparation. The applicant shall ensure that supporting surface slopes and foundation are stable and structurally sound;
 9. Ensure that the liner is anchored by being secured in an engineered anchor trench. If regularly exposed to sunlight, the applicant shall ensure that the liner is ultraviolet resistant; and
 10. Use compacted clay subgrade in areas with shallow groundwater conditions.
- D. Operational requirements. The permittee shall:
1. Maintain the freeboard required in subsection (C)(1) through design, pumping, or both;
 2. Remove accumulated residues, sediments, debris, and vegetation to maintain the integrity ~~and of~~ the liner ~~to maintain and the design capacity of the impoundment~~;
 3. ~~Document~~ Perform and document a visual inspection for cracks, tears, perforations and residual build-up at least monthly. The operator shall conduct and document an inspection after the facility receives significant volumes of ~~storm water~~ stormwater inflow;
 4. Report cracks, tears, and perforations in the liner to the Department, and repair them as soon as practical, but no later than 60 days under normal operating conditions, after discovery of the crack, tear, or perforation;
 5. For facilities that temporarily contain a process solution due to process upsets, remove the process solution from the facility as soon as practical, but no later than 60 days after cessation of the upset; and
 6. For facilities that temporarily contain a process solution due to rainfall, remove the process solution from the facility as soon as practical.
- E. Recordkeeping. A permittee shall maintain the following information for at least 10 years and make it available to the Department upon request:
1. Construction drawings and as-built ~~drawings~~ plans, if available;
 2. A log book or similar documentation to record inspection results, repair and maintenance activities, monitoring results and facility closure;
 3. Capacity design criteria;
 4. ~~List~~ A list of standard operating procedures;
 5. The Quality Assurance/Quality Control program required under subsection (C)(4); and
 6. Records of any unauthorized flows into the impoundment.
- F. Reporting requirements.
1. If the liner is breached, as evidenced by a drop in water level not attributable to evaporation, or if the impoundment breaches or is overtopped due to a catastrophic or other significant event, the permittee shall report the circumstance to the Department within five days of discovery and implement the contingency plan required in subsection (B)(3). The permittee shall submit a final report to the Department within 60 days of the event summarizing the circumstances of the problem and corrective actions taken.
 2. The permittee shall report unauthorized flows into the impoundment to the Department within five days of discovery and implement the contingency plan required in subsection (B)(3).
- G. Closure requirements.
1. The permittee shall notify the Department of the intent to close the facility permanently.
 2. Within 90 days following closure notification the permittee shall comply with the following requirements, as applicable:
 - ~~1-a.~~ Remove liquids and any solid residue on the liner ~~material~~ and dispose of it appropriately;
 - ~~2-b.~~ Inspect the liner ~~material~~ for evidence of holes, tears, or defective seams that could have leaked;
 - ~~3-c.~~ If evidence of leakage is discovered, remove the liner in the area of suspected leakage and sample potentially impacted soil. If soil remediation levels are exceeded, the permittee shall, within 60 days notify the Department and submit an action plan for the Department's approval before implementing the plan;
 - ~~4-d.~~ If there is no evidence of holes, tears, or defective seams that could have leaked:
 - ~~a-i.~~ Cover the liner in place or remove it for disposal or reuse if the impoundment is an excavated impoundment,

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- ~~b-ii.~~ Remove and dispose of the liner elsewhere if the impoundment is bermed, and
 - ~~e-iii.~~ Grade the facility to prevent the impoundment of water; and
- 5-3. Notify the Department within 60 days following closure that the action plan has been implemented and the closure is complete.

R18-9-D305. 3.05 General Permit: Disposal Wetlands

- A. A 3.05 General Permit allows discharges of reclaimed water into constructed or natural wetlands, including waters of the United States, waters of the state, and riparian areas, for disposal. This general permit does not apply if the purpose of the wetlands is to provide treatment.
- B. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B), an applicant shall submit the name and individual permit number of the facility providing the reclaimed water.
- C. Design requirements. An applicant shall:
 - 1. Ensure that the reclaimed water released into the wetland meets numeric and narrative Aquifer Water Quality Standards for all parameters except for coliform bacteria and is Class A+ reclaimed water. A+ reclaimed water is wastewater that has undergone secondary treatment established under R18-9-B204(B)(1), filtration, and meets a total nitrogen concentration ~~less than 10 mg/4~~ under R18-9-B204(B)(3) and fecal coliform limits under ~~R18-9-B204(B)(4)(b)~~ R18-9-B204(B)(4);
 - 2. Maintain a minimum horizontal separation of 100 feet between any water supply well and the maximum wetted area of the wetland;
 - 3. Post signs at points of access and every 250 feet along the perimeter of the wetland stating, "CAUTION. THESE WETLANDS CONTAIN RECLAIMED WATER. DO NOT DRINK." The applicant shall ensure that the signs are in English and Spanish, or in English with inclusion of the international "do not drink" symbol; and
 - 4. Ensure that wetland siting is consistent with local zoning and land use requirements.
- D. Operational requirements.
 - 1. A permittee shall manage the wetland to minimize vector problems.
 - 2. The permittee shall submit to the Department and implement a Best Management Practices Plan for operation of the wetland. The Best Management Practices Plan shall include:
 - a. A site plan showing the wetland footprint, point of inflow, ~~storm water~~ stormwater drainage, and placement of vegetation;
 - b. Management of flows into and through the wetland to minimize erosion and damage to vegetation;
 - c. Management of visitation and use of the wetlands by the public;
 - d. A management plan for vector control;
 - e. A plan or criteria for enhancing or supplementing of wetland vegetation; and
 - f. Management of shallow groundwater conditions on existing on-site wastewater treatment facilities.
 - 3. The permittee shall perform quarterly inspections to review bank integrity, erosion evidence, the condition of signage and vegetation, and correct any problem noted.
- E. Recordkeeping. A permittee shall maintain the following information for at least 10 years and make it available to the Department upon request:
 - 1. Construction drawings and as-built ~~drawings~~ plans, if available; and
 - 2. A log book or similar documentation to record inspection results, repair and maintenance activities, monitoring results, and facility closure.
- F. Reporting requirements. The permittee shall by January 30, provide the Department in writing with an annual assessment of the biological condition of the wetland, including the volume of inflow to the wetland in the past year.

R18-9-D306. 3.06 General Permit: Constructed Wetlands to Treat Acid Rock Drainage at Mining Sites

- A. A 3.06 General Permit allows the operation of constructed wetlands that receive, with the intent to treat, acid rock drainage from a closed facility.
- B. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B), an applicant shall submit a design, including information on the quality of the influent, the treatment process to be used, the expected quality of the wastewater, and the nutrients and other constituents that will indicate wetland performance.
- C. Design, construction, and installation. An applicant shall:
 - 1. Ensure that:
 - a. Water released into the treatment wetland is compatible with construction materials and vegetation;
 - b. Water released from the treatment wetland;
 - i. ~~meets~~ Meets numeric Aquifer Water Quality Standards,
 - ii. ~~Has a~~ Has a pH ~~is~~ between 6.0 and 9.0, and
 - iii. ~~Has a~~ Has a sulfate concentration ~~is~~ less than 1000 mg/l; and
 - c. Water released from the treatment wetland complies with and is released under an individual permit and a ~~National Pollution Discharge Elimination System~~ an AZPDES Permit, if required;
 - 2. Construct the treatment wetland with a liner, using a low-hydraulic conductivity ~~artificial~~ synthetic liner ~~material~~,

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site-specific liner ~~material~~, or both, to achieve a calculated seepage rate of less than 550 gallons per acre per day. The applicant shall:

- a. Ensure that, if ~~an artificial~~ a synthetic liner ~~material~~ is used, such as geomembrane, the ~~material~~ liner is underlain by at least ~~six~~ 6 inches of prepared and compacted subgrade;
- b. Anchor the liner along the perimeter of the treatment wetland; and
- c. Manage the plants in the treatment wetland to prevent species with root penetration that impairs liner performance-;

3. Design the treatment wetland for optimum:

- a. Sizing appropriate for the anticipated treatment,
- b. Cell configuration,
- c. Vegetative species composition, and
- d. Berm configuration-;

4. Construct and locate the treatment wetland so that it:

- a. Maintains physical integrity during a 100-year, 24-hour storm event; and
- b. Operates properly during a 25-year, 24-hour storm event-;

5. Ensure that the bottom of the treatment wetland is at least 20 feet above the seasonal high groundwater table-; and

6. If public access to the treatment wetland is anticipated or encouraged, post signs at points of access and every 250 feet along the perimeter of the treatment wetland stating, "CAUTION. THESE WETLANDS CONTAIN MINE DRAINAGE WATER. DO NOT DRINK." The permittee shall ensure that the signs are in English and Spanish, or in English with inclusion of the international "do not drink" symbol.

D. Operational requirements.

1. The permittee shall monitor the water leaving the treatment wetlands at least quarterly for the standards specified in subsection (C)(1)(b). Monitoring shall include nutrients or other constituents used as indicators of treatment wetland performance.

2. The permittee shall submit to the Department and implement a Best Management Practices Plan for operation of the treatment wetland. The Best Management Practices Plan shall include:

- a. A site plan showing the treatment wetland footprint, point of inflow, ~~storm-water~~ stormwater drainage, and placement of vegetation;
- b. A contingency plan to address problems, including treatment performance, wash-out and vegetation die-off, and a plan to apply for an individual permit if the treatment wetland is unable to achieve the treatment standards in subsection (C)(1)(b) on a continued basis;
- c. Management of flows into and through the treatment wetland to minimize erosion and damage to vegetation;
- d. A description of the measures for restricting access to the treatment wetlands by the public;
- e. A management plan for vector control; and
- f. A plan or criteria for enhancing or supplementing treatment wetland vegetation.

3. The permittee shall perform quarterly inspections to review the bank and liner integrity, erosion evidence, and the condition of signage and vegetation, and correct any problems noted.

E. Recordkeeping. A permittee shall maintain the following information for at least 10 years and make it available to the Department upon request:

1. Construction drawings and as-built ~~drawings~~ plans, if available; and
2. A log book or similar documentation to record inspection results, repair and maintenance activities, monitoring results, and facility closure.

F. Reporting requirements.

1. If preliminary laboratory ~~result indicates~~ results indicate that the quality of the water leaving the treatment wetlands does not meet the standards specified in subsection (C)(1)(b), the permittee may request that the laboratory re-analyze the sample before reporting the results to the Department. The permittee shall:

- a. Conduct verification sampling within 15 days of receiving final laboratory results,
- b. Conduct verification sampling only for parameters that are present in concentrations greater than the standards specified in subsection (C)(1)(b), and
- c. Notify the Department in writing within five days of receiving final laboratory results.

2. If the final laboratory result confirms that the quality of the water leaving the treatment wetlands does not meet the standards in subsection (C)(1)(b), the permittee shall implement the contingency plan required by subsection (D)(2)(b) and notify the Department that the plan is being implemented.

3. The permittee shall, by January 30, provide the Department in writing with an annual assessment of the biological condition of the treatment wetland, including the volume of inflow to the treatment wetland in the past year.

R18-9-D307. 3.07 General Permit: Tertiary Treatment Wetlands

A. A 3.07 General Permit allows constructed wetlands that receive with the intent to treat, discharges of reclaimed water that meet the secondary treatment level requirements specified in R18-9-B204(B)(1).

B. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B),

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an applicant shall submit:

1. The name and individual permit number of any facility that provides the reclaimed water to the treatment wetland;
2. The name and individual permit number of any facility that receives water released from the treatment wetland;
3. The design of the treatment wetland construction and management project, including information on the quality of the influent, the treatment process, and the expected quality of the wastewater;
4. A Best Management Practices Plan that includes:
 - a. A site plan showing the treatment wetland footprint, point of inflow, ~~storm-water~~ stormwater drainage, and placement of vegetation;
 - b. A contingency plan to address any problem, including treatment performance, wash-out, and vegetation die-off;
 - c. A management plan for flows into and through the treatment wetland to minimize erosion and damage to vegetation;
 - d. A description of the measures for restricting access to the treatment wetlands by the public;
 - e. A management plan for vector control; and
 - f. A plan or criteria for enhancing or supplementing treatment wetland vegetation.

C. Design requirements. An applicant shall:

1. Release water from the treatment wetland under an individual permit and ~~a National Pollution Discharge Elimination System or an AZPDES~~ permit, if required. The applicant shall release water from the treatment wetland only to a direct reuse site if the site is permitted to receive reclaimed water of the quality generated under the individual permit specified in subsection (B)(1);
2. Construct and locate the treatment wetland so that it:
 - a. Maintains physical integrity during a 100-year, 24-hour storm event; and
 - b. Operates properly during a 25-year, 24-hour storm event;
3. Ensure that the bottom of the treatment wetland is at least 20 feet above the seasonal high groundwater table;
4. Maintain a minimum horizontal separation of 100 feet between ~~any~~ a water supply well and the maximum wetted area of the treatment wetland;
5. Maintain ~~a minimum 1000 foot setback~~ the setbacks specified in R18-9-B201(I) for no noise, odor, or aesthetic controls between the property boundary at the site and the maximum wetted area of the treatment wetland;
6. Fence the treatment wetland area to prevent unauthorized access;
7. Post signs at points of access stating "CAUTION. THESE WETLANDS CONTAIN RECLAIMED WATER, DO NOT DRINK." The applicant shall ensure that the signs are in English and Spanish, or in English with inclusion of the international "do not drink" symbol;
8. Construct the treatment wetland with a liner using low hydraulic conductivity ~~artificial synthetic liner material~~, site-specific liner material, or both, to achieve a calculated seepage rate of less than 550 gallons per acre per day. The applicant shall:
 - a. Ensure that if ~~an artificial a synthetic liner material~~ is used, such as geomembrane, the ~~material~~ liner is underlain by at least ~~six~~ 6 inches of prepared and compacted subgrade;
 - b. Anchor the liner along the perimeter of the treatment wetland; and
 - c. Manage the plants in the treatment wetland to prevent species with root penetration that impairs liner performance;
9. Calculate the size and depth of the treatment wetland so that the rate of flow allows adequate treatment detention time. The applicant shall design the treatment wetland with at least two parallel treatment cells to allow for efficient system operation and maintenance;
10. Ensure that the treatment wetland vegetation includes cattails, bulrush, common reed, or other species of plants with high pollutant treatment potential to achieve the intended water quality identified in subsection (B)(3); and
11. Ensure that construction and operation of the treatment wetlands is consistent with local zoning and land use requirements.

D. Operational requirements. The permittee shall:

1. Implement ~~an approved~~ the Best Management Practices Plan approved under subsection (B);
2. Monitor wastewater leaving the treatment wetland to ensure that discharge water quality meets the ~~intended treatment expected wastewater quality~~ specified in subsection ~~(A)(3)~~ (B)(3). The permittee shall ensure that analyses of wastewater samples are conducted by a laboratory certified by the Department of Health Services, following the Department's Quality Assurance/Quality Control requirements;
3. Follow the prescribed measures as required in the contingency plan under subsection (B)(4)(b) and submit a written report to the Department within five days if verification sampling demonstrates that an alert level or discharge limit is exceeded;
4. Inspect the treatment wetlands at least quarterly for bank and liner integrity, erosion evidence, and condition of signage and vegetation, and correct any problem discovered; and
5. Ensure that the treatment wetland is operated by a certified operator under 18 A.A.C. 5, Article 1.

E. Recordkeeping. A permittee shall maintain the following information for at least 10 years and make it available to the

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Department upon request:

1. Construction drawings and as-built ~~drawings~~ plans, if available; and
 2. A log book or similar documentation to record inspection results, repair and maintenance activities, monitoring results, and facility closure.
- F. Reporting requirements. The permittee shall, by January 30, provide the Department in writing with an annual assessment of the biological condition of the treatment wetland including the volume of inflow to the treatment wetland in the past year.

PART E. TYPE 4 GENERAL PERMITS

R18-9-E301. 4.01 General Permit: Sewage Collection Systems

- A. A 4.01 General Permit allows for construction and operation of a new sewage collection system or ~~an~~ expansion of an existing sewage collection system involving new construction as follows:
- ~~1. A sewer collection system includes all sewer lines and associated structures, devices, and appurtenances that:~~
 - ~~a. Are owned or controlled by a public or private sewer utility extending from the treatment works to the upstream points in the system where private owners assume ownership or control; or~~
 - ~~b. Serve multiple private users from the upstream points where the individual users assume ownership or control to the downstream point where the sewer delivers wastewater to a sewage collection system owned or controlled by a public or private sewer utility, or to a sewage treatment facility.~~
 - ~~2. A sewer collection system repair is not an expansion of the system that requires a Notice of Intent to Discharge. Repairs include work performed in response to deterioration of existing structures, devices, and appurtenances with the intent to maintain or restore the system to its original operational characteristics.~~
 1. A sewage collection system or portion of a sewage collection system that serves downstream from the point where the daily design flow is 3000 gallons per day based on Table 1, Unit Design Flows, except a gravity sewer line conveying sewage from a single building drain directly to an interceptor, collector sewer, lateral, or manhole regardless of daily design flow;
 2. A sewage collection system that includes a manhole; or
 3. A sewage collection system that includes a force main or lift station serving more than one dwelling.
- B. Performance. An applicant shall design, construct, and operate a sewage collection system so that ~~it~~ the sewage collection system:
1. Provides adequate wastewater flow capacity for the planned service area;
 2. Minimizes sedimentation, blockage, and erosion through maintenance of proper flow velocities throughout the system;
 3. Prevents ~~sanitary sewer overflows~~ releases of sewage to the land surface through appropriate sizing, capacities, and inflow and infiltration prevention measures throughout the system;
 4. Protects water quality through minimization of exfiltration losses from the system;
 5. Provides for adequate inspection, maintenance, testing, visibility, and accessibility; ~~and~~
 6. Maintains system structural integrity; and
 7. Minimizes septic conditions in the sewage collection system.
- C. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B), an applicant shall submit the following information:
1. A statement on a form approved by the Director, signed by the owner or operator of the sewage treatment facility that treats or processes the sewage from the proposed ~~sewer~~ sewage collection system.
 - a. The ~~owner or operator~~ statement shall affirm that the additional volume of wastewater delivered to the facility by the proposed ~~sewer~~ sewage collection system will not cause any flow or effluent quality limits of the individual permit for the facility to be exceeded.
 - b. If the facility is classified as a groundwater protection permit facility under A.R.S. § 49-241.01(C), or if no flow or effluent limits are applicable, the ~~owner or operator~~ statement shall affirm that the design flow of the facility will not be exceeded;
 2. If the proposed sewage collection system delivers wastewater to a downstream ~~sewer~~ sewage collection system under different ownership or control, a statement on a form approved by the Director, signed by the owner or operator of the downstream ~~sewer~~ sewage collection system, affirming that the downstream system can maintain the performance required by subsection (B) ~~if it receives~~ when receiving the increased flows ~~associated with the new system or the expansion~~;
 3. A general site plan showing the boundaries and key aspects of the project;
 4. Construction quality drawings that provide overall details of the site and the engineered works comprising the project including:
 - a. ~~Relevant~~ The plans and profiles ~~of~~ for all sewer lines, ~~force mains~~, manholes, ~~force mains~~, depressed sewers, and lift stations with sufficient detail to allow Department verification of design and performance characteristics;
 - b. Relevant cross sections showing construction details and elevations of key components of the ~~sewer~~ sewage col-

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lection system to allow Department verification of design and performance characteristics, including the slope of each gravity sewer segment stated as a percentage; ~~and~~

- c. ~~Drainage features and controls, and erosion protection as applicable, for the components of the project; and~~
- d. Horizontal and vertical location of utilities within the area affected by the sewer line construction;
- 5. Documentation of design flows for significant components of the sewage collection system and the basis for calculating the design flows;
- 6. ~~An operation and maintenance plan if the project has a design flow of more than 10,000 gallons per day;~~
- 7. ~~Drawings, reports, and other information that are clear, reproducible, and in a size and format specified by the Department. The applicant may submit the drawings in a Department-approved electronic format; and~~
- 8. ~~Design documents, including plans, specifications, drawings, reports, and calculations that are signed, dated, and sealed by an Arizona-registered professional engineer unless prohibited by law. The designer shall use good engineering judgement~~ judgment by following engineering standards of practice, and rely on appropriate engineering methods, calculations, and guidance.

D. Design requirements.

- 1. General Provisions. ~~An applicant shall ensure that the design, installation, and testing of a new sewage collection system or an expansion to an existing sewage collection system involving new construction complies with the following rules: An applicant shall design and construct a new sewage collection system or an expansion of an existing sewage collection system involving new construction, according to the requirements of this general permit. An applicant shall:~~
 - a. Base design flows for components of the system on unit flows specified in Table 1, Unit ~~Daily~~ Design Flows. If documented by the applicant, the Department may accept lower unit flow values in the served area due to significant use of low flow fixtures.
 - b. Use the "Uniform Standard Specifications for Public Works Construction," referenced in this Section and published by the Maricopa Association of Governments, revisions through 2000, or the "Pima County Wastewater Management," November 1994 Edition, as the applicable design and construction criteria, unless the Department approved alternative design standards or specifications authorized by a delegation agreement under A.R.S. § 49-107.
 - e. ~~b. Use gravity sewer lines, if appropriate. The applicant shall design~~ Design gravity sewer lines and all other sewer sewage collection system components, including ~~force mains, manholes, force mains, lift stations, depressed sewers,~~ and appurtenant devices and structures to accommodate maximum sewage flows as determined by the method specified in subsections (D)(1)(e)(i) or (D)(1)(e)(ii) that yields the greatest calculated flow as follows:
 - i. Any point in a sewer main when flowing full can accommodate ~~an average flow of 100 gallons per capita per day for all populations upstream from that point, or a peak wet weather flow calculated by multiplying the sum of the upstream sources of flow from Table 1, Unit Design Flows by a dry weather peaking factor based on upstream population, as tabulated below, and adding a wet weather infiltration and inflow rate based on either a percentage of peak dry weather flow or a gallons per acre rate of flow;~~
 - ii. ~~Any point in a sewer collection system can accommodate a peak flow for all populations upstream from that point as tabulated below:~~

Upstream Population	<u>Dry Weather Peaking Factor</u>
100	3.62
200	3.14
300	2.90
400	2.74
500	2.64
600	2.56
700	2.50
800	2.46
900	2.42

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1000	2.38
1001 to 10,000	PF = (6.330 x p ^{-0.231}) + 1.094
10,001 to 100,000	PF = (6.177 x p ^{-0.233}) + 1.128
More than 100,000	PF = (4.500 x p ^{-0.174}) + 0.945

PF = Dry Weather Peaking Factor

p = Upstream Population

- ii. For a lift station serving less than 600 single family dwelling units (d.u.), use either of the following methods to size the pumps for peak dry weather flow in gallons per minute and add an allowance for wet weather flow and infiltration:
 - (1) Peak dry weather flow = 17 d.u.^{0.42}, or
 - (2) Peak dry weather flow = 11.2 (population)^{0.42}
 - iii. If justified by the applicant, the Department may accept lower unit flow values in the served area due to significant use of low-flow fixtures, hydrographs of actual flows, or other factors:
 - c. Use the "Uniform Standard Specifications for Public Works Construction" (revisions through 2004) and the "Uniform Standard Details for Public Works Construction" (revisions through 2004) published by the Maricopa Association of Governments, and the "Standard Specifications for Public Improvements," (2003 Edition), and "Standard Details for Public Improvements," (2003 Edition), published jointly by Pima County Wastewater Management and the City of Tucson, as the applicable design and construction criteria, unless the Department approves alternative design standards or specifications. An applicant in a county other than Maricopa and Pima shall use design and construction criteria from either the Maricopa Association of Governments or the Pima County Wastewater Management and the City of Tucson for the facility unless alternative criteria are designated by the Department.
 - i. This material is incorporated by reference and does not include any later amendments or editions of the incorporated material.
 - ii. Copies of the incorporated material are available for inspection at the Arizona Department of Environmental Quality, 1110 W. Washington, Phoenix, AZ 85007 or may be obtained from the Maricopa Association of Governments, 302 N. 1st Avenue, Suite 300, Phoenix, Arizona 85003, or on the web at <http://www.mag.maricopa.gov/archive/Newpages/on-line.htm>; or from Pima County Wastewater Management, 201 N. Stone Avenue, Tucson, Arizona 85701-1207, or on the web at <http://www.pima.gov/www/stdDET>;
 - d. Ensure the separation of that sewage collection system components are separated from drinking water distribution system components under R18-4-502, as specified in 18 A.A.C. 5, Article 5;
 - e. Ensure that sewage collection system components are separated from reclaimed water system components as specified in 18 A.A.C. 9, Article 6; and
 - e.f. Request review and approval of an alternative to a design feature specified in this Section by following the requirements of in R18-9-A312(G).
- 2. Gravity sewer lines. An applicant shall:
 - a. Ensure that any sewer line that runs between manholes, if not straight, is of constant horizontal curvature with a radius of curvature not less than 200 feet;
 - b. Cover each sewer line with at least ~~three~~ 3 feet of ~~backfill~~ earth cover meeting the requirements of subsection (D)(2)(h). The applicant shall:
 - i. Include at least one note specifying this requirement in construction plans;
 - ii. If site-specific limitations prevent ~~three~~ 3 feet of earth cover, provide the maximum cover attainable, and construct the sewer line of ductile iron pipe or other materials design of equivalent or greater tensile and compressive strength, and note the change on the construction plans; and
 - iii. If ductile iron pipe is not used, design and construct the sewer line pipe with restrained joints or an equivalent feature; and
 - iv. Ensure that the design of the pipe and joints can withstand crushing or shearing from any expected static and live load to protect the structural integrity of the pipe. Construction plans shall note locations requiring these measures;
 - c. If sewer lines cross or are constructed in floodways:
 - i. ~~place~~ Place the lines at least ~~two~~ 2 feet below the level of the 100-year storm scour depth and calculated 100-year bed degradation and construct the lines using ductile iron pipe or pipe with equivalent tensile strength,

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- compressive strength, shear resistance, and scour protection. ~~The applicant shall:~~
- ii. If it is not possible to maintain the 2 feet of clearance specified in subsection (D)(2)(c)(i), using the process described in R18-9-A312(G), provide a design that ensures that the sewer line will withstand any lateral and vertical load for the scour and bed degradation conditions specified in subsection (D)(2)(c)(i);
 - iii. ensure ~~Ensure~~ that sewer lines constructed in ~~this manner~~ a floodway extend at least 10 feet beyond the boundary of the 100-year storm scouring.;
 - iv. If a sewer line is constructed in a floodway and is longer than the applicable maximum manhole spacing distance in subsection (D)(3)(a), using the process described in R18-9-A312(G), provide a design that ensures the performance standards in subsection (B) are met; and
 - v. ~~Construction plans shall note~~ Note locations requiring these measures on the construction plans.;
- d. Ensure that each sewer line is ~~eight~~ 8 inches in diameter or larger except:
- i. ~~The the~~ first 400 feet of a dead end sewer line with no potential for extension may be ~~six~~ 6 inches in diameter if the design flow criteria specified in ~~subsection (D)(1)(C)~~ subsections (D)(1)(a) and (D)(1)(b) are met and the sewer line is installed with a slope sufficient to achieve a velocity of at least 3 feet per second when flowing full. If the line is ~~ever~~ extended, the applicant seeking the extension shall replace the entire length with larger pipe to accommodate the new design flow unless the applicant demonstrates with engineering calculations that using the existing 6-inch pipe will accommodate the design flow; ~~or~~
 - ii. ~~The sewer lines for a sewage collection system for a manufactured home, mobile home, or recreational vehicle park are not less than four inches in diameter for up to 20 units, five inches in diameter for 21 to 36 units, and six inches in diameter for 37 to 60 units.~~
- e. Design sewer lines with at least the minimum slope calculated from Manning's Formula using a coefficient of roughness of 0.013 and a sewage velocity of ~~two~~ 2 feet per second when flowing full.
- i. An applicant may request a smaller minimum slope under R18-9-A312(G) if the smaller slope is justified by a quarterly program of inspections, flushings, and cleanings.
 - ii. If a smaller minimum slope is requested, the applicant shall not specify a slope shall not be that is less than 50% percent of that calculated from Manning's formula using a coefficient of roughness of 0.013 and a sewage velocity of ~~two~~ 2 feet per second.
 - iii. The ratio of flow depth in the pipe to the diameter of the pipe shall not exceed 0.75 in peak dry weather flow conditions;
- f. Design sewer lines to avoid a slope that creates a sewage velocity greater than 10 feet per second. The applicant shall construct any sewer line carrying a flow with a normal velocity of greater than 10 feet per second using ductile iron pipe or pipe with equivalent erosion resistance, and structurally reinforce the receiving manhole or sewer main.;
- g. Design and install sewer lines, connections, and fittings with materials that meet or exceed manufacturer's specifications ~~not inconsistent~~ consistent with this Chapter to:
- i. Limit inflows, infiltration, and exfiltration;
 - ii. Resist corrosion in the ~~project~~ ambient electrochemical environment;
 - iii. Withstand anticipated static and live and dead loads; and
 - iv. Provide internal erosion protection.;
- h. Indicate trenching and bedding details applicable for each pipe material and size in the design plans. ~~Sewer~~ Unless the Department approved alternative design standards or specifications under subsection (D)(1)(c), the applicant shall place and bed the sewer lines shall be placed in trenches and bedded following the specifications established in subsections (D)(2)(h)(i) and (D)(2)(h)(ii) "Trench Excavation, Backfilling, and Compaction" (Section 601) revised 2004, published by the Maricopa Association of Governments; and "Rigid Pipe Bedding for Sanitary Sewers" (WWM 104) revised July 2002, and "Flexible Pipe Bedding for Sanitary Sewers" (WWM 105) revised July 2002, published by Pima County Wastewater Management. This material is part of the material incorporated by reference in subsection (D)(1)(b). This material is incorporated by reference and does not include any later amendments or editions of the incorporated matter. Copies of the incorporated material are available for inspection at the Department of Environmental Quality and the Office of the Secretary of State, or may be obtained from the Maricopa Association of Governments, 302 N. 1st Avenue, Suite 300, Phoenix, Arizona 85003, or from Pima County Wastewater Management, 201 N. Stone Avenue, Tucson, Arizona 85701-4207.
- i. ~~"Trench Excavation, Backfilling, and Compaction" (Section 601), published in the "Uniform Standard Specifications for Public Works Construction" published by the Maricopa Association of Governments, revisions through 2000; and~~
 - ii. ~~"Rigid Pipe Bedding for Sanitary Sewers" (WWM 104), and "Flexible Pipe Bedding for Sanitary Sewers" (WWM 105), published by Pima County Wastewater Management, revised November 1994.;~~
- i. Perform a deflection test of the total length of all sewer lines made of flexible materials to ensure that the installation meets or exceeds the manufacturer's recommendations and record the results.;

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- j. Test each segment of the sewer line for leakage using the applicable method below and record the results:
 - i. "Standard Test Method for Installation of Acceptance of Plastic Gravity Sewer Lines Using Low-Pressure Air, F1417-92(1998)," published by the American Society for Testing and Materials, ~~(F1417-92)~~, ~~reap-~~
~~proved 1998~~;
 - ii. "Standard Practice for Testing Concrete Pipe Sewer Lines by Low-Pressure Air Test Method, C924-02 (2002)," published by the American Society for Testing and Materials, ~~(C 924-89)~~, ~~reapproved 1997~~;
 - iii. "Standard Test Method for Low-Pressure Air Test of Vitrified Clay Pipe Lines, C828-03 (2003)," published by the American Society for Testing and Materials, ~~(C 828-98)~~, ~~approved March 10, 1998~~; or
 - iv. "Standard Test Method for Hydrostatic Infiltration Testing of Vitrified Clay Pipe Lines, C1091-03a (2003)," published by the American Society for Testing Materials;
 - v. "Standard Practice for Infiltration and Exfiltration Acceptance Testing of Installed Precast Concrete Pipe Sewer Lines, C969-02 (2002)," published by the American Society for Testing Material; or
 - vi. "Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications, D2321-00 (2000)," published by the American Society for Testing Materials; or
 - ~~iv-vii.~~ The material listed in subsections (D)(2)(j)(i), ~~(D)(2)(j)(ii)~~, and ~~(D)(2)(j)(iii)~~ through (vi) is incorporated by reference and does not include any later amendments or editions of the incorporated ~~matter~~ material. Copies of the incorporated material are available for inspection at the Arizona Department of Environmental Quality, 1110 W. Washington, Phoenix, AZ 85007 and the ~~Office of the Secretary of State~~, or may be obtained from the American Society for Testing and Materials International, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959;
 - k. Test the total length of the sewer line for uniform slope by lamp lighting, remote camera, or similar method approved by the Department, and record the results; and
 - l. Minimize the planting within the disturbed area of new sewage collection system construction of plant species having roots that are likely to reach and damage the sewer or impair the operation of the sewer or visual and vehicular access to any manhole.
3. Manholes.
- a. An applicant shall install manholes at all grade changes, ~~all~~ size changes, ~~all~~ alignment changes, ~~all~~ sewer intersections, and at any location necessary to comply with the following spacing requirements:

Sewer Pipe Diameter (inches)	Maximum Manhole Spacing (feet)
4 to less <u>Less</u> than 8	300 <u>400</u>
8 to less than 18	500
18 to less than 36	600
36 to less than 60	800
60 or greater	1300

- b. The Department shall allow greater manhole spacing ~~following if the applicant follows~~ the procedure provided in R18-9-A312(G) ~~if and provides~~ documentation ~~is provided~~ showing the operator possesses or has available specialized sewer cleaning equipment suitable for the increased spacing.
- c. The applicant shall ensure that manhole design is consistent with "Pre-cast Concrete Sewer Manhole" (~~#420~~) #420-1, revised January 1, 2004 and #420-2, revised January 1, 2001, "Offset Manhole for 8" – 30" Pipe" (~~#421~~) #421 (1998), and "Brick Sewer Manhole and Cover Frame Adjustment" (~~#422~~) #422, revised January 1, 2001, 1998, including revisions through 2000, published by the Maricopa Association of Governments; and "Manholes and Appurtenant Items" (WWM 201 through WWM 211, except WWM 204, 205, and 206), revised July 2002, Standard Details for Public Improvements, 1994 Edition, published by Pima County Wastewater Management. This material is part of the material incorporated by reference in subsection (D)(1)(b).
- ~~d. The material specified in subsection (D)(3)(c) is incorporated by reference and does not include any later amendments or editions of the incorporated matter. Copies of the incorporated material are available for inspection at the Department of Environmental Quality and the Office of the Secretary of State, or may be obtained from the Maricopa Association of Governments, 302 N. 1st Avenue, Suite 300, Phoenix, Arizona 85003, or from Pima County Wastewater Management, 201 N. Stone Avenue, Tucson, Arizona 85701-1207.~~
- ~~e.d.~~ The applicant shall not locate manholes in areas subject to more than incidental runoff from rain falling in the immediate vicinity unless the manhole cover assembly is designed to restrict or eliminate ~~storm water~~ stormwater inflow.

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- ~~f.e.~~ The applicant shall test ~~manholes~~ each manhole using one of the following test protocols:
- i. Watertightness testing by filling the manhole with water. The applicant shall ensure that the drop in water level following presoaking does not exceed ~~0.004~~ 0.0034 of total manhole volume ~~in one per hour~~;
 - ii. ~~Air~~ Negative air pressure testing using the "Standard Test Method for Concrete Sewer Manholes by Negative Air Pressure (Vacuum) Test, C1244-02e1 (2002)," published by the American Society for Testing and Materials, (C 1244-93), ~~approved August 15, 1993.~~ This material is incorporated by reference, does not include any later amendments or editions of the incorporated ~~matter~~, material and ~~is on file with the Office of the Secretary of State. The material may be viewed at the Arizona Department of Environmental Quality, 1110 W. Washington, Phoenix, AZ 85007~~ Water Quality Division, or obtained from the American Society for Testing and Materials International, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959; or
 - iii. Holiday testing of a lined manhole constructed with uncoated rebar using the "High-Voltage Electrical Inspection of Pipeline Coatings, RP0274-2004 (2004)," published by the National Association of Corrosion Engineers (NACE International). This material is incorporated by reference as modified below, does not include any later amendments or editions of the incorporated material and may be viewed at the Arizona Department of Environmental Quality, 1110 W. Washington, Phoenix, AZ 85007 or obtained from NACE International, 1440 South Creek Drive, Houston, Texas 77084-4906. The following substitutions apply:
 - (1) Where the word "metal" is used in the standard, use the word "surface" instead; and
 - (2) Where the words "pipe" or "pipeline" are used, use the word "manhole" instead.
- ~~g.f.~~ The applicant shall perform manhole testing under subsection ~~(D)(3)(f)~~ (D)(3)(e) after installation of the manhole cone or top riser to verify watertightness integrity of the manhole from the top of the cone or riser down.
- i. Upon satisfactory test results, the applicant shall install the manhole ring and any spacers, complete the joints, and seal the manhole to a watertight condition.
 - ii. If the applicant can install the manhole cone or top riser, spacers, and ring ~~can be installed~~ to final grade without disturbance or adjustment by later construction, the applicant may perform the testing from the top of the manhole ring on down.
- ~~h.g.~~ The applicant shall locate a manhole to provide adequate visibility and vehicular maintenance accessibility ~~after the manhole has been built~~ following construction.
4. Force mains. ~~If it is impractical to install a gravity sewer line system, an~~ An applicant may install a force main if it meets the following design, installation, and testing requirements. The applicant shall:
- a. Design force mains to maintain a minimum flow velocity of ~~three~~ 3 feet per second and a maximum flow velocity of ~~seven~~ 7 feet per second. The applicant may design for sustained periods of flow above 7 feet per second, if the applicant justifies the design using the process specified in R18-9-A312(G);
 - b. Ensure that force mains have the appropriate valves and controls required to prevent drainback to the lift station. If drainback is necessary during cold weather to prevent freezing, the control system may allow manual or automatic drainback;
 - c. Incorporate air release valves or other appropriate components in force mains at all high points along the line to eliminate air accumulation. If engineering calculations provided by the applicant demonstrate that air will not accumulate in a given high point under typical flow conditions, the Department shall waive the requirement for an air release valve;
 - d. ~~Provide Design thrust blocks, or restrained joints or thrust blocks on force mains to accommodate water hammer, surge control, and if needed, to prevent excessive movement of the force main. Construction Submitted construction plans shall show thrust block or restrained joint or thrust block locations and details; The documentation submitted to the Department for verification of the general permit shall include calculations and analysis of water hammer potential and surge control measures and shall be signed and sealed by an Arizona-registered professional engineer.~~
 - e. If a force main is proposed to discharge directly to a sewage treatment facility without entering a flow equalization basin, include in the Notice of Intent to Discharge a statement from the owner or operator of the sewage treatment facility that the design is acceptable;
 - f. Design a force main to withstand, ~~and upon completion test the force main for leakage, at a pressure of 50 pounds per square inch or more above the design working pressure~~ for two hours and test upon completion to ensure no leakage;
 - g. Supply flow to a force main using a lift station that meets the requirements of subsection (D)(5); and
 - h. Ensure that force mains are designed to control odor.
5. Lift stations. An applicant shall:
- a. Secure a lift station to prevent tampering and affix on its exterior, or on the nearest vertical object if the lift station is entirely below grade, at least one warning sign that includes the 24-hour emergency phone number of the owner or operator of the collection system;
 - b. Protect lift stations from physical damage from a 100-year flood event. ~~Construction of~~ An applicant shall not construct a lift station is prohibited in a floodway;

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- c. Lift station wet well design. ~~The applicant shall:~~
 - i. Ensure that the minimum wet well volume in gallons ~~shall be~~ is 1/4 of the product of the minimum pump cycle time, in minutes, and the total pump capacity, in gallons per minute;
 - ii. Protect the wet well against corrosion to provide at least a 20-year ~~design~~ operational life;
 - iii. Ensure that wet well volume does not allow the sewage retention time to exceed 30 minutes unless the sewage is aerated, chemicals are added to prevent or eliminate hydrogen sulfide formation, or adequate ventilation is provided. Notwithstanding these measures, the applicant shall not allow the septic condition of the sewage to adversely affect downstream collection systems or sewage treatment facility performance;
 - iv. Ensure that excessively high or low levels of sewage in the wet well trigger an audible or ~~visual~~ visible alarm at the wet well site and at the system control center; ~~and~~
 - v. Ensure that a wet well designed to accommodate more than 5000 gallons per day has a horizontal ~~open~~ cross-sectional area of at least 20 square feet; ~~and~~
 - vi. Ensure that lift stations are designed to prevent odor from emanating beyond the lift station site;
 - d. Equip a lift station wet well with at least two pumps. The applicant shall ensure that:
 - i. The pumps are capable of passing a 2.5-inch sphere or are grinder pumps;
 - ii. The lift station is capable of operating at design flow with any one pump out of service; and
 - iii. Piping, valves, and controls are arranged to allow independent operation of each pump;
 - e. Not use suction pumps if the sewage lift is more than 15 feet. The applicant shall ensure that other types of pumps are self-priming and that pump water brake horsepower is at least 0.00025 times the product of the required discharge, in gallons per minute, and the required total dynamic head, in feet; ~~and~~
 - f. ~~For safety during operation and maintenance, design lift stations to conform with all applicable state and federal confined space requirements; and~~
 - ~~g-f.~~ For lift stations receiving an average flow of more than 10,000 gallons per day, include a standby power source and redundant wastewater level controls in the lift station design that may be put into will provide immediate service immediately and remain available for 24 hours per day if the main power source or controls fail.
6. Depressed sewers. An applicant shall:
- a. Size the depressed sewer to attain a minimum velocity of 3 feet per second through all barrels of the depressed sewer when the flow equals or exceeds the design daily peak dry weather flow.
 - b. Design the depressed sewer to convey the sewage flow through at least two parallel pipes at least 6 inches in diameter.
 - c. Include an inlet and outlet structure at each end of the inverted sewer.
 - d. Design the depressed sewer so that the barrels are brought progressively into service as flow increases to its design value, and
 - e. Design the depressed sewer to minimize release of odors to the atmosphere.
- E. ~~Additional Verification of General Permit Conformance~~ Discharge Authorization requirements. An applicant shall:
- 1. Supply a signed, dated, and sealed Engineer's Certificate of Completion, ~~unless prohibited by law,~~ in a format approved by the Department that provides the following:
 - a. Confirmation that the project was completed in compliance with the requirements of this Chapter, as described in the plans and specifications corresponding to the ~~Provisional Verification of General Permit Conformance~~ Construction Authorization issued by the Director, or with changes that are reflected in as-built plans submitted with the Engineer's Certificate of Completion;
 - b. As-built plans, if required, that are properly identified and numbered; and
 - c. ~~Confirmation of satisfactory~~ Satisfactory field test results from deflection, leakage, and uniform slope testing;
 - 2. Provide any other relevant information required by the Department to determine that the facility conforms to the terms of ~~this general permit~~ the 4.01 General Permit; and
 - 3. ~~If the project has a design flow of more than 10,000 gallons per day, provide a final operation and maintenance plan that includes the 24-hour emergency number of the owner or operator of the system. Provide a signed certification on a form approved by the Department that:~~
 - a. Confirms that an operation and maintenance manual exists for the sewage collection system;
 - b. Confirms that the operation and maintenance manual addresses components of operation and maintenance specified on the certification form;
 - c. Provides the 24-hour emergency number of the owner or operator of the sewage collection system; and
 - d. Provides an address where the operation and maintenance manual is maintained and confirms that the manual is available for inspection at that address by the Department on request.
- F. Operation and maintenance requirements. The permittee shall:
- 1. ~~The permittee of a sewage collection system that includes a force main and lift station or that has a design flow of more than 10,000 gallons per day shall maintain, and revise as needed, an operation and maintenance plan for the system at the system control center.~~
 - 2. ~~The permittee shall ensure that the operation and maintenance plan is the basis for operation and continuing maintenance.~~

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~~nance of the sewer collection system.~~

1. Operate the new sewage collection system or expansion of an existing sewage collection system involving new construction using the operation and maintenance manual certified by the owner or operator in subsection (E)(3), to meet the performance standards specified in subsection (B), unless the permittee is operating the sewage collection system under a CMOM Plan under the general permit established in R18-9-C305;
2. Ensure that the sewage collection system is operated according to the operator certification requirements in 18 A.A.C. 5, Article 1; and
3. For safety during operation and maintenance of lift station and other confined space components of the sewage collection system, follow all applicable state and federal confined space entry requirements.

G. Recordkeeping. A person owning or operating a facility permitted under this Section shall maintain the documents listed in subsection (E) for the life of the facility and make them available to the Department upon request.

H. Repairs.

1. A Notice of Intent to Discharge is not required for sewage collection system repairs. Repairs include work performed in response to deterioration or damage of existing structures, devices, and appurtenances with the intent to maintain or restore the system to its original design flow and operational characteristics. Repairs do not include changes in vertical or horizontal alignment.
2. Components used in the repair shall meet the design, installation, and operational requirements of this Section.

R18-9-E302. 4.02 General Permit: Septic Tank ~~With~~ with Disposal by Trench, Bed, Chamber Technology, or Seepage Pit, Less Than 3000 Gallons Per Day Design Flow

A. A 4.02 General Permit allows for the construction and operation of a system with less than 3000 gallons per day design flow consisting of a septic tank dispensing wastewater to an approved means of disposal described in this Section. Only gravity flow of wastewater from the septic tank to the disposal field works is authorized by this general permit.

1. ~~The standard septic tank and disposal field works design specified in this general permit is intended to serve most the 4.02 General Permit serves~~ sites where no site limitations are identified by the site investigation conducted under R18-9-A310.
2. If site conditions allow, this general permit authorizes the discharge of wastewater from a septic tank meeting the requirements of R18-9-A314 to one of the following disposal fields works:
 - a. ~~Shallow trench~~ Trench,
 - b. ~~Deep trench~~,
 - c. ~~Bed~~,
 - d. ~~Disposal field using chamber~~ Chamber technology, or
 - e. ~~Seepage pit~~.

B. Performance. An applicant shall design a system consisting of a septic tank and one of the disposal fields works listed in subsection (A)(2) ~~on the basis so~~ that treated wastewater released to the native soil meets the following criteria:

1. TSS of 75 milligrams per liter, 30-day arithmetic mean;
2. BOD₅ of 150 milligrams per liter, 30-day arithmetic mean;
3. Total nitrogen (as nitrogen) of 53 milligrams per liter, five-month arithmetic mean; and
4. Total coliform level of 100,000,000 (Log₁₀ 8) colony forming units per 100 milliliters, 95th percentile.

C. Design and installation requirements.

1. General provisions. ~~The~~ In addition to the applicable requirements in R18-9-A312, the applicant shall:
 - a. Ensure that the septic tank meets the requirements specified in R18-9-A314;
 - b. Before placing aggregate or ~~drain lines~~ disposal pipe in a prepared excavation, remove all smeared or compacted surfaces from trenches by raking to a depth of ~~one~~ 1 inch and removing loose material. The applicant shall:
 - i. Place aggregate in the trench to the depth and grade specified in subsection (C)(2);
 - ii. Place the drain pipe on aggregate and cover it with aggregate to the minimum depth specified in subsection (C)(2); and
 - iii. Cover the aggregate with landscape filter material, geotextile, or similar porous material to prevent filling of voids with earth backfill;
 - c. Use a grade board stake placed in the trench to the depth of the aggregate if the ~~distribution line~~ disposal pipe is constructed of drain tile or flexible pipe that will not maintain alignment without continuous support;
 - d. Disposal pipe. If two or more ~~drain lines~~ disposal pipes are installed, install a distribution box approved by the Department of sufficient size to receive all lateral lines and flows at the head of each disposal field works and ~~The applicant shall:~~
 - i. Ensure that the inverts of all outlets are level and the invert of the inlet is at least ~~one~~ 1 inch above the outlets;
 - ii. Design distribution boxes to ensure equal flow and install the boxes on a stable level surface such as a concrete slab or native or compacted soil; and
 - iii. Protect concrete distribution boxes from corrosion by coating them with an appropriate bituminous coating, constructing the boxes with concrete that has a 15 to 18% percent fly ash content, or by using other ~~allow~~

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~~able~~ equivalent means:

- e. Construct all lateral pipes running from a distribution box to the disposal ~~field~~ works with watertight joints and ensure that multiple disposal ~~field~~ laterals, wherever practical, are of uniform length;
 - f. Lay pipe connections between the septic tank and a distribution box on natural ground or compact fill and construct the pipe connections with watertight joints;
 - g. Construct steps within distribution line trenches or beds, if necessary, to maintain a level disposal pipe on sloping ground. The applicant shall construct the lines between each horizontal section ~~shall be constructed~~ with watertight joints and ~~installed~~ install them on natural or unfilled ground; and
 - h. Ensure that a disposal ~~field~~ works consisting of trenches, beds, chamber technology, or seepage pits is not paved over or covered by concrete or any material that can reduce or inhibit possible evaporation of wastewater through the soil to the land surface or oxygen transport to the soil absorption surfaces.
2. ~~Shallow and deep trenches~~ Trenches.
- a. The applicant ~~may, in computing the trench bottom absorption, include a trench sidewall area between 12 and 36 inches below the distribution line~~ shall calculate the trench absorption area as the total of the trench bottom area and the sum of both trench sidewall areas to a maximum depth of 48 inches below the bottom of the disposal pipe.
 - b. The applicant shall ensure that trench bottoms and disposal pipe are level. The applicant shall calculate trench sizing ~~for shallow and deep trenches~~ from the soil absorption rate specified under R18-9-A312(D) and the design flow established in R18-9-A312(B).
 - c. The following design criteria for ~~shallow and deep~~ trenches apply:

Shallow and Deep Trenches	Minimum	Maximum
1. Number of trenches	1 (2 are recommended)	<u>No Maximum</u>
2. Length of trench ¹	—	100 feet
3. Bottom width of trench	12 inches	36 inches
4. <u>Trench absorption area (sq. ft. of absorption area per linear foot of trench)</u>	<u>No Minimum</u>	<u>11 sq. ft.</u>
5. Depth of cover over distribution <u>aggregate surrounding disposal pipe</u>	9 inches	24 inches ^{1,2}
6. <u>Thickness of aggregate material over disposal pipe</u>	<u>2 inches</u>	<u>2 inches</u>
7. Aggregate <u>Thickness of aggregate material under disposal pipe</u>	12 inches	<u>No Maximum</u>
Aggregate material over pipe	<u>2 inches</u>	<u>2 inches</u>
8. Slope of distribution <u>disposal pipe</u>	Level	Level
9. Distribution <u>Disposal pipe diameter</u>	3 inches	4 inches
10. Spacing of distribution pipe trenches <u>(measured between nearest sidewalls)</u>	2 times effective depth ^{2,3} or five feet, whichever is greater	<u>No Maximum</u>

Notes:

1. If unequal trench lengths are used, proportional distribution of wastewater is required.

1,2. For more than 24 inches, ~~SDR~~ Standard Dimensional Ratio 35 or equivalent strength pipe is required.

3. The effective depth is the distance between the bottom of the disposal pipe and the bottom of the trench ~~bed~~.

d. The applicant may substitute clean, durable, crushed, and washed recycled concrete for aggregate if noted in design documents and the trench absorption area calculation excludes the trench bottom.

3. Beds. An applicant shall:

a. If a bed is installed, ~~instead of a trench, ensure that the area of each bed is at least 50% greater than the tabular~~

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~~dimensions required for a trench. use the soil absorption rate specified in R18-9-A312(D) for “SAR, Bed. The applicant may, in computing the bed bottom absorption area, include a the bed bottom and the perimeter sidewall area between 12 and 36 inches not more than 36 inches below the disposal line pipe-;~~

- b. ~~Ensure that the bottom of a bed is level and calculate bed sizing from the soil absorption rate as specified by R18-9-A312(D)-~~

e.b. ~~The following design criteria for beds apply:~~ Comply with the following design criteria for beds:

Gravity Beds	Minimum	Maximum
<u>1.</u> Number of distribution disposal pipes	2	<u>No Maximum</u>
<u>2.</u> Length of bed	<u>No Minimum</u>	100 feet
<u>3.</u> Distance between disposal pipes	4 feet	6 feet
<u>4.</u> <u>Spacing of beds measured between nearest sidewalls</u>	<u>2 times effective depth¹ or 5 feet, whichever is greater</u>	<u>No Maximum</u>
<u>5.</u> Width of bed	10 feet	12 feet
<u>6.</u> Distance from disposal pipe to sidewall	3 feet	3 feet
<u>7.</u> Depth of cover over disposal pipe	9 inches	14 inches
<u>8.</u> Aggregate Thickness of aggregate material under disposal pipe	12 inches	<u>No Maximum</u>
<u>9.</u> Aggregate Thickness of aggregate material over disposal pipe	2 inches	2 inches
<u>10.</u> Slope of distribution disposal pipe	Level	Level
<u>11.</u> Distribution Disposal pipe diameter	3 inches	4 inches

Note:

1. The effective depth is the distance between the bottom of the disposal pipe and the bottom of the bed.

4. ~~Disposal field using chamber~~ Chamber technology. An applicant shall:

- a. ~~If leaching chambers are proposed instead of trenches or beds installed with distribution pipes, calculate~~ Calculate an equivalent effective chamber absorption area to size the disposal field works area and determine the number of chambers needed. The effective absorption area of each chamber is calculated as follows:

$$A = (1.43 \times 1.8 \times B \times L) + (2 \times V \times L)$$

- i. “A” is the effective absorption area of each chamber,
- ii. “B” is the ~~nominal exterior~~ width of the open bottom absorption surface of the chamber,
- iii. “V” is the vertical height of the ~~louvered sidewall of the chamber sidewall~~, and
- iv. “L” is the length of the chamber-;

- b. Calculate the disposal field works size and number of chambers from the effective absorption area of each chamber and the soil absorption rates specified in R18-9-A312(D), ~~taking care to use the appropriate value, depending on whether the proposed chamber installation is shallow or deep. Example calculations for effective chamber absorption area, disposal field size, and number of required chambers are on file with the Department-;~~

- c. Ensure that the sidewall of the chamber provides at least 35% percent open area for sidewall credit and that the design and construction minimizes the movement of fines into the chamber area. ~~The applicant shall not use of filter fabric or geotextile against the sidewall openings is prohibited.~~

5. ~~Seepage pits. The~~ If allowed by R18-9-A311(B)(1), the applicant shall:

- a. ~~If allowed by R18-9-A311, design~~ Design a seepage pit to comply with R18-9-A312(E)(1) for minimum vertical separation distance;
- b. Ensure that multiple seepage pit installations are served through a distribution box approved by the Department or connected in series with a watertight connection laid on undisturbed or compacted soil. The applicant shall ensure that the outlet from the pit has a sanitary tee with the vertical leg extending at least 12 inches below the inlet;

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- c. Ensure that each seepage pit is circular and has an excavated diameter of ~~four 4~~ to ~~six 6~~ feet. If multiple seepage pits are installed, ensure that the minimum spacing between seepage pit sidewalls is 12 feet or three times the diameter of the seepage pit, whichever is greater. The applicant may use the alternative design procedure specified in R18-9-A312(G) for a proposed seepage pit more than ~~six 6~~ feet in diameter;
- d. For a gravel filled seepage pit, backfill the entire pit with aggregate. The applicant shall ensure that each pit has a breather conductor pipe that consists of a perforated pipe at least ~~four 4~~ inches in diameter, placed vertically within the backfill of the pit. The pipe shall extend from the bottom of the pit to within 12 inches below ground level;
- e. For a lined, hollow seepage pit, lay a concrete liner or a liner of a different ~~approved~~ protective material in the pit on a firm foundation and fill excavation voids behind the liner with at least ~~nine 9~~ inches of aggregate;
- f. For the cover of a lined seepage pit, use an approved one or two piece reinforced concrete slab with a minimum compressive strength of 2500 pounds per square inch. The applicant shall ensure that the cover:
 - i. Is at least ~~five 5~~ inches thick and designed to support an earth load of at least 400 pounds per square foot;
 - ii. Has a 12-inch square or diameter minimum access hole with a plug or cap that is coated on the underside with an ~~approved~~ protective bituminous seal, constructed of concrete with 15% percent to 18% percent fly ash content, or made of other nonpermeable protective material; and
 - iii. Has a ~~four 4~~-inch or larger inspection pipe placed vertically not more than ~~six 6~~ inches below ground level;
- g. Ensure that the top of the seepage pit cover is ~~four 4~~ to 18 inches below the surface of the ground;
- h. Install a vented inlet fitting in every seepage pit to prevent flows into the seepage pit from damaging the sidewall.
 - ~~i. An applicant may use a 1/4 bend fitting placed through an opening in the top of the slab cover if a one or two piece concrete slab cover inlet is used; or~~
 - ~~ii. For multiple seepage pit installations, an applicant shall install the outlet fittings following a reference design drawing on file with the Department.~~
- i. Bore seepage pits five feet deeper than the proposed pit depth to verify underlying soil characteristics and backfill the five feet of overdrill with low permeability drill cuttings or other suitable material;
- j. Backfill seepage pits that terminate in gravelly, coarse sand zones five feet above the beginning of the zone with low permeability drill cuttings or other suitable material;
- k. Determine the minimum sidewall area for a seepage pit from the design flow and the soil absorption rate derived from the testing procedure described in ~~R18-9-A310(F)~~ R18-9-A310(G). The effective absorption surface for a seepage pit is the sidewall area only. The sidewall area is calculated ~~by using~~ the following formula:

$$A = 3.14 \times D \times H$$

- i. "A" is the minimum sidewall area in square feet needed for the design flow and soil absorption rate for the installation;
- ii. "D" is the diameter of the proposed seepage pit in feet;
- iii. "H" is the vertical height in feet in the seepage pit through which wastewater infiltrates native soil. The applicant shall ensure that H is at least 10 feet for any seepage pit.

D. Operation and maintenance. The permittee shall follow the applicable operation and maintenance requirements in R18-9-A313.

R18-9-E303. 4.03 General Permit: Composting Toilet, Less Than 3000 Gallons Per Day Design Flow

- A. A 4.03 General Permit allows for the use of a composting toilet with less than 3000 gallons per day design flow.
 - 1. Definition. For purposes of this Section, "composting toilet" means a manufactured turnkey or kit form treatment technology that receives human waste from a waterless toilet directly into an aerobic composting tank chamber where dehydration and biological activity reduce the waste volume and the content of nutrients and harmful microorganisms to an appropriate level for later disposal at the site or elsewhere by other means.
 - ~~2. An applicant shall use a composting toilet system only if a wastewater system or gray water system is used to accommodate wastewater that does not originate from toilets.~~
 - ~~3.2.~~ An applicant may use a composting toilet if:
 - a. Limited water availability prevents use of other types of on-site wastewater treatment facilities,
 - b. Environmental constraints prevent the discharge of wastewater or nutrients to a sensitive area,
 - c. Inadequate space prevents use of other systems, ~~or~~
 - d. Severe site limitations exist that make other forms of treatment or disposal unacceptable, or
 - e. The applicant desires maximum water conservation.
 - 3. A permittee may use a composting toilet only if:
 - a. Wastewater is managed as provided in this Section and, if gray water is separated and reused, the gray water reuse complies with 18 A.A.C. 9, Article 7; and
 - b. Soil conditions support subsurface disposal of all wastewater sources.
- B. Restrictions. ~~An applicant shall:~~
 - 1. ~~Not install a composting toilet if the composting chamber temperature cannot be maintained between 60°F and 70°F~~

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- or for any seven day average the temperature of the chamber is less than 55°F or greater than 80°F, and A permittee shall ensure that no more than 50 persons per day use the composting toilet.
2. Ensure that a A composting toilet system receives only shall only receive human excrement unless the manufacturer's specifications allow the deposit of kitchen or other wastes into the toilet.
- C. Performance. An applicant shall ensure that ~~a composting toilet~~:
1. ~~Prevents The composting toilet provides containment to prevent the discharge of blackwater toilet contents to the native soil through containment in the composting toilet system; except leachate, which may drain to the wastewater disposal works described in subsection (F);~~
 2. ~~Manages gray water as provided in this Article or under A.A.C. Title 18, and~~
 - 3-2. ~~Prevents The composting toilet limits access by vectors to the contained waste; and~~
 3. ~~Wastewater is disposed into the subsurface to prevent any wastewater from surfacing.~~
- D. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B) and R18-9-A309(B), the applicant shall submit the following information:
1. Composting toilet.
 - 1-a. The name and address of the composting toilet system manufacturer;
 - 2-b. A copy of the manufacturer's warranty, and the specifications for installation; and operation, and maintenance plans;
 - 3-c. The product model number;
 - 4-d. The rate of composting Composting rate, and capacity, and waste accumulation volume calculations;
 - 5-e. Documentation of listing by a national listing organization indicating that the composting toilet meets the stated manufacturer's specifications for loading, treatment performance, and operation, unless the composting toilet is listed under R18-9-A309(E) or is a component of a reference design approved by the Department;
 - 6-f. The method of vector control; and
 - 7-g. The calculation of waste volume and planned method and frequency for disposing of the composted human excrement residue; and
 - h. The planned method for disposing of the drainage from the composting unit; and
 2. Wastewater.
 - a. The number of bedrooms in the dwelling or persons served on a daily basis, as applicable, and the corresponding design flow of the disposal works for the wastewater;
 - b. The results from soil evaluation or percolation testing that adequately characterize the soils into which the wastewater will be dispersed and the locations of soil evaluation and percolation testing on the site plan; and
 - c. The design for the disposal works in subsection (F), including the location of the interceptor, the location and configuration of the trench or bed used for wastewater dispersal, the location of connecting wastewater pipelines, and the location of the reserve area.
- E. Design requirements for a composting toilet. An applicant shall ensure that:
1. ~~Ensure that the~~ The composting tank chamber is double-walled for leak protection watertight, constructed of solid durable materials not subject to excessive corrosion or decay, and is constructed to exclude access by vectors;
 2. ~~Ensure that the~~ The composting tank chamber has airtight seals to prevent odor or toxic gas from escaping into the building. The system may be vented to the outside;
 3. ~~Base the~~ The capacity of the chamber and rate of composting and capacity calculations are calculated based on:
 - a. ~~the~~ The lowest monthly average tank chamber temperature, unless a temperature control device is installed; or
 - b. The yearly average chamber temperature, if the composting toilet is designed to compost on a yearly cycle or longer; and
 4. ~~Unless a temperature control device is installed, ensure that the capacity of the~~ The composting facility system provides adequate storage for of all waste produced during the months when the average temperature is below 55°F, if the manufacturer allows operation at this temperature; unless a temperature control device is installed to increase the composting rate and reduce waste volume.
 5. ~~Dispose of the composted product at the end of the treatment process as provided under 18 A.A.C. 8 and 18 A.A.C. 13.~~
- F. Design requirements for the disposal works.
1. Interceptor. An applicant shall ensure that the design complies with the following:
 - a. Wastewater passes into an interceptor before it is conducted to the subsurface for dispersal;
 - b. The interceptor is designed to remove grease, oil, fibers, and solids to ensure long-term performance of the trench or bed used for subsurface dispersal;
 - c. The interceptor is covered to restrict access and eliminate habitat for mosquitoes and other vectors; and
 - d. Minimum interceptor size is based on design flow.
 - i. For a dwelling, the following apply:

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<u>No. of Bedrooms</u>	<u>Design Flow (gallons per day)</u>	<u>Minimum Interceptor Size (gallons)</u>	
		<u>Kitchen Wastewater Only (All gray water sources are collected and reused)</u>	<u>Combined Non-Toilet Wastewater (Gray water is not separated and reused)</u>
1 (7 fixture units or less)	90	42	200
1-2 (greater than 7 fixture units)	180	84	400
3	270	125	600
4	330	150	700
5	380	175	800
6	420	200	900
7	460	225	1000

ii. For other than a dwelling, minimum interceptor size in gallons is 2.1 times the design flow from Table 1, Unit Design Flows.

2. Dispersal of wastewater. An applicant shall ensure that the design complies with the following:

a. A trench or bed is used to disperse the wastewater into the subsurface;

b. Sizing of the trench or bed is based on the design flow of wastewater as determined in subsection (F)(1)(d) and an SAR determined under R18-9-A312(D);

c. The minimum vertical separation from the bottom of the trench or bed to a limiting subsurface condition is at least 5 feet; and

d. Other aspects of trench or bed design follow R18-9-E302, as applicable.

3. Setback distances. Setback distances are no less than 1/4 of the setback distances specified in R18-9-A312(C), but not less than 5 feet, except the setback distance from wells is 100 feet.

F.G. Operation and maintenance requirements. A permittee shall:

1. Composting toilet.

1-a. Provide adequate mixing, ventilation, temperature control, moisture, and bulk to reduce fire hazard and prevent anaerobic conditions;

2-b. If consistent with this Chapter, follow the Follow manufacturer's recommendations specifications regarding use of an for addition of any organic bulking agent to control liquid drainage, promote aeration, or provide additional carbon;

3-c. If consistent with this Chapter, follow Follow the manufacturer's recommendations specifications for operation, and maintenance, and recordkeeping regarding rotating times used to control the movement of material to the bottom of within the composting chamber;

4-d. If batch system containers are mounted on a carousel, place a new container in the toilet area if the previous one is full;

5-e. Ensure that only human waste, paper approved for septic tank use, and the amount of bulking material required for proper maintenance is introduced to the composting tank chamber. The applicant permittee shall immediately remove all other materials or trash. If allowed by the manufacturer's specifications and consistent with this Chapter, the permittee may add other nonliquid compostable food preparation residues, such as fruit and vegetable peels, may be added to the toilet;

6-f. Ensure that any liquid end product that does not evaporate is:

i. sprayed Sprayed back onto the composting waste material;

ii. or removed Removed by a permitted or licensed waste hauler person who licensed a vehicle under 18 A.A.C. 13, Article 11; or

iii. Is drained to the interceptor described in subsection (F);

7-g. Remove and dispose of composted waste, at least annually as necessary, using a permitted or licensed waste hauler person who licensed a vehicle under 18 A.A.C. 13, Article 11 if the waste is not placed in a disposal area for burial or used on-site as mulch;

8-h. Before ending use for an extended period take measures to assure ensure that moisture is maintained to sustain

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bacterial activity and free liquids in the ~~tank~~ chamber do not freeze; and

9-i. After an extended period of non-use, empty the composting ~~tank~~ chamber of solid end product and inspect all mechanical components to verify that the mechanical components are operating as designed;

2. Wastewater Disposal Works.

a. Ensure that the interceptor is maintained regularly according to manufacturer's instructions to prevent grease and solid wastes from impairing performance of the trench or bed used for dispersal of wastewater, and

b. Protect the area of the trench or bed from soil compaction or other activity that will impair dispersal performance.

H. Reference design.

1. An applicant may use a composting toilet that achieves the performance requirements in subsection (C) by following a reference design on file with the Department.

2. The applicant shall file a form provided by the Department for supplemental information about the proposed system with the applicant's submittal of the Notice of Intent to Discharge.

R18-9-E304. 4.04 General Permit: Pressure Distribution System, Less Than 3000 Gallons Per Day Design Flow

A. A 4.04 General Permit allows for the use of a pressurized distribution of wastewater system with a design flow less than 3000 gallons per day that ~~treated~~ treats wastewater to a level equal to or better than that ~~provided by a 4.02 General Permit septic tank~~ specified in R18-9-E302(B).

1. Definition. For purposes of this Section, a "pressure distribution system" means a tank, pump, controls, and piping that conducts wastewater under pressure in controlled amounts and intervals to a ~~disposal field, bed, trench, bed or trench~~ or other means of ~~disposal~~ distribution authorized by a general permit for an on-site wastewater treatment facility.

2. An applicant may use a pressure distribution ~~systems~~ system if a gravity flow system is unsuitable, inadequate, unfeasible, or cost prohibitive because of site limitations or other conditions, or if needed to optimally ~~disperse~~ distribute wastewater ~~to some types of disposal systems.~~

B. Performance. An applicant shall ensure that a pressure distribution system:

1. ~~Has Department approved dispersing components that provide proper dispersal of~~ Disperses wastewater so that:

a. ~~loading~~ Loading rates are optimized for the ~~particular system~~ intended purpose, and

b. The wastewater is delivered under pressure and evenly distributed within the disposal works, and

2. Prevents ponding on the land surface.

C. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B) and R18-9-A309(B), the applicant shall submit:

1. A copy of operation, maintenance, and warranty materials for the principal components; and

2. A copy of dosing specifications, including pump curves, dispersing component ~~curves~~ details, and float ~~switch~~ control settings.

D. Design requirements.

1. Pumps. An applicant shall ensure pumps used in the on-site wastewater treatment facility:

a. Are rated for ~~effluent~~ wastewater service by the manufacturer and certified by Underwriters Laboratories;

b. Achieve the minimum design flow rate and total dynamic head requirements for the particular site; and

c. Incorporate a quick disconnect using compression-type unions for pressure connections. The applicant shall ensure that:

i. Quick-disconnects are accessible in the pressure piping, and

ii. A pump has adequate lift attachments for removal and replacement of the pump and switch assembly without entering the dosing tank or process chamber.

2. Switches, controls, alarms, timers, and electrical components. An applicant shall ensure that:

a. Switches and controls accommodate the minimum and maximum dose capacities of the distribution network design. ~~Pressure~~ The applicant shall not use pressure diaphragm level control switches ~~are prohibited;~~

b. ~~Controls designed for fail-safe treatment or flow equalization functions are field tested to assure compliance with the design and operation specifications~~ Fail-safe controls that can be tested in the field are used to prevent discharge of inadequately treated wastewater. The applicant shall include counters or flow meters if critical to control functions, such as timed dosing;

c. Control panels and alarms:

i. Are mounted in an exterior location visible from the dwelling,

ii. Provide manual pump switch and alarm test features, and

iii. Include written instructions covering standard operation and alarm events;

d. Audible and ~~visual~~ visible alarms are used for all critical control functions, such as pump failures, treatment failures, and excess flows. The applicant shall ensure that:

i. The visual portion of the signal is conspicuous from a distance 50 feet from the system and its appurtenances;

ii. The audible portion of the signal is between 70 and 75 db at 5 feet and is discernable from a distance of 50

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- feet from the system and its appurtenances; and
- iii. Alarms, test features, and controls are on a non-dedicated electrical circuit associated with a frequently used household lighting fixture and separate from the dedicated circuit for the pump;
- e. All electrical wiring complies with the National Electrical Code, ~~1999~~ 2005 Edition, published by the National Fire Protection Association. This material is incorporated by reference and does not include any later amendments or editions of the incorporated ~~matter~~ material. Copies of the incorporated material are available for inspection at the Arizona Department of Environmental Quality, 1110 W. Washington, Phoenix, AZ 85007 ~~and the Office of the Secretary of State~~, or may be obtained from the National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101. The applicant shall ensure that:
 - i. Connections are made using National Electrical Manufacturers Association (NEMA) 4x junction boxes certified by Underwriters Laboratories; and
 - ii. All controls are in NEMA 3r, 4, or 4x enclosures for outdoor use.
- 3. Dosing tanks and wastewater distribution components. ~~An applicant shall:~~
 - a. An applicant shall:
 - ~~a.i.~~ i. Design dosing tanks to withstand anticipated internal and external loads under full and empty conditions, and design concrete tanks to meet the "Standard Specification for Precast Concrete Water and Wastewater Structures, C913-02 (2002)," published by the American Society for Testing and Materials, ~~(C-913-98), approved December 10, 1998.~~ This material is incorporated by reference and does not include any later amendments or editions of the incorporated ~~matter~~ material. Copies of the incorporated material are available for inspection at the Arizona Department of Environmental Quality, 1110 W. Washington, Phoenix, AZ 85007 ~~and the Office of the Secretary of State~~, or may be obtained from the American Society for Testing and Materials International, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959;
 - ~~b.ii.~~ ii. Design dosing tanks to be easily accessible and have secured covers;
 - ~~c.iii.~~ iii. Install risers to provide access to the inlet and outlet of the tank and to service internal components;
 - ~~d.iv.~~ iv. Ensure that the volume of the dosing tank accommodates bottom depth below maximum drawdown, maximum design dose, including any drainback, volume to high water alarm, and a reserve volume above the high water alarm level that is not less than the daily design flow volume. If the tank is time dosed, the applicant shall ensure that the combined surge capacity and reserve volume above the high water alarm is not less than the daily design flow volume; ~~and~~
 - ~~e.v.~~ v. Ensure that dosing tanks are watertight and anti-buoyant;
 - vi. Design the wastewater distribution components to withstand system pumping pressures;
 - vii. Design the wastewater distribution system to allow air to purge from the system;
 - viii. Design pressure piping to minimize freezing during cold weather;
 - ix. Ensure that the end of each wastewater distribution line is accessible for maintenance;
 - x. Ensure that orifices emit the design discharge rate uniformly throughout the wastewater distribution system; and
 - xi. Design orifices using orifice shields to provide proper distribution of wastewater to the receiving medium.
 - b. An applicant may use a septic tank second compartment or a second septic tank in series as a dosing tank if all dosing tank requirements of this Section are met and a screened vault is used instead of the septic tank effluent filter.
- 4. Design SAR. If the site conditions of the property for the on-site wastewater treatment facility do not require pressure distribution, but an applicant chooses to use pressure distribution, the applicant shall use a design SAR for the absorption surfaces in the disposal works that is not more than 1.10 times the adjusted SAR determined in R18-9-A312(D).
- ~~E.~~ Installation requirements. An applicant may use a septic tank second compartment or a second septic tank in series as a dosing tank if all dosing tank requirements of this Section are met and a screened vault is used instead of the septic tank effluent filter. An applicant shall:
 - ~~1. Install switches, controls, alarms, and electrical components for easy access for routine monitoring and maintenance; and~~
 - ~~2. Compact berms around the disposal area to 85% and ensure that the berms are adequate to retain wastewater and rainwater from a 10-year, 24-hour rainfall event within the disposal field.~~
- ~~F.E.~~ Additional Verification of General Permit Conformance Discharge Authorization requirements. An installer ~~An applicant~~ shall provide ~~obtain~~ copies of instructions for the critical controls of the system to the homeowner and from the person who installed the pressure distribution system. The applicant shall submit one copy of the instructions with the information required in subsection (C) the Department before issuance of the Verification of General Permit Conformance.
- ~~G.F.~~ Operation and maintenance requirements. In addition to the applicable requirements specified in R18-9-A313-R18-9-A313(B), a permittee shall ensure that:
 - 1. The operation and maintenance ~~plan~~ manual for the on-site wastewater treatment facility that supplies the wastewater to the pressure distribution system specifies inspection and maintenance needed for the following items:
 - a. Sludge level in the bottom of the treatment and dosing tanks,

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- b. Watertightness,
 - c. Condition of electrical and mechanical components, and
 - d. Piping and other components functioning within design limits;
2. All critical control functions are specified in the Operation and Maintenance Plan operation and maintenance manual for testing to demonstrate compliance with design specifications, including:
 - a. Alarms, test features, and controls;
 - b. Float switch level settings;
 - c. Dose rate, volume, and frequency, if applicable;
 - d. Distal pressure or squirt height, if applicable; and
 - e. Voltage test on pumps, motors, and controls, as applicable;
3. The finished grade is observed and maintained for proper surface drainage. The applicant shall observe the levelness of the tank for differential settling. If there is settling, the applicant shall grade the facility to maintain surface drainage.

R18-9-E305. 4.05 General Permit: Gravelless Trench, Less Than 3000 Gallons Per Day Design Flow

- A. A 4.05 General Permit allows for the use of a gravelless trench with less than 3000 gallons per day design flow receiving wastewater treated to a quality level equal to or better than that provided by a 4.02 General Permit septic tank specified in R18-9-E302(B). ~~This general permit authorizes the discharge of wastewater from a septic tank that meets the requirements of R18-9-A314 to the gravelless pipe system described in this Section.~~
 1. Definition. For purposes of this Section, a “gravelless trench” means a disposal technology characterized by installation of a proprietary pipe, ~~chamber~~, and geocomposite or other substitute media into native soil instead of the distribution pipe and aggregate fill used in a ~~conventional disposal field trench~~ allowed in R18-9-E302.
 2. A permittee may use a gravelless trench if suitable gravel or volcanic rock aggregate is unavailable, excessively expensive, or if adverse site conditions make movement of gravel difficult, damaging, or time consuming.
- B. Performance. An applicant shall design a gravelless trench ~~on the basis so~~ that treated wastewater released to the native soil meets the following criteria:
 1. TSS of 75 milligrams per liter, 30-day arithmetic mean;
 2. BOD₅ of 150 milligrams per liter, 30-day arithmetic mean;
 3. Total nitrogen (as nitrogen) of 53 milligrams per liter, 5-month arithmetic mean; and
 4. Total coliform level of 100,000,000 (Log₁₀ 8) colony forming units per 100 milliliters, 95th percentile.
- C. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B) and R18-9-A309(B), an applicant shall submit the following:
 1. The soil absorption area that ~~is~~ would be required if a conventional disposal ~~field~~ trench filled with aggregate ~~is~~ was used at the site,
 2. The configuration and size of the proposed gravelless disposal ~~field~~ works, and
 3. The manufacturer’s installation instructions and warranty of performance for absorbing wastewater into the native soil.
- D. Design requirements. ~~An~~ In addition to the applicable requirements in R18-9-A312, an applicant shall:
 1. Ensure that the top of the gravelless disposal pipe or similar disposal mechanism is at least ~~six~~ 6 inches below the surface of the native soil and 12 to 36 inches below finished grade if approved fill is placed on top of the installation;
 2. Calculate the infiltration surface as follows:
 - a. For ~~eight~~ 8-inch diameter pipe, ~~two~~ 2 square feet of absorption area is allowed per linear foot;
 - b. For 10-inch diameter pipe, ~~three~~ 3 square feet of absorption area is allowed per linear foot;
 - c. For bundles of two pipes of the same diameter, the absorption area is calculated as 1.67 times the absorption area of one pipe; and
 - d. For bundles of three pipes of the same diameter, the absorption area is calculated as 2.00 times the absorption area of one pipe;
 3. Use a pressure distribution system meeting the requirements of R18-9-E304 in medium sand, coarse sand, and coarser soils; and
 4. Construct the drainfield of material that will not decay, deteriorate, or leach chemicals or byproducts if exposed to sewage or the subsurface soil environment.
- E. Installation requirements. ~~An~~ In addition to the applicable requirements in R18-9-A313(A), an applicant shall:
 1. Install the gravelless pipe material according to manufacturer’s instructions if the instructions are consistent with this Chapter,
 2. Ensure that the installed disposal system can withstand the physical disturbance of backfilling and the load of any soil cover above natural grade placed over the installation, and
 3. Shape any backfill and soil cover in the area of installation to prevent settlement and ponding of rainfall for the life of the disposal ~~field~~ works.

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- F. Operation and maintenance requirements. In addition to the applicable requirements in ~~R18-9-A313~~ R18-9-A313(B), the permittee shall inspect the finished grade in the vicinity of the gravelless disposal ~~field~~ works for maintenance of proper drainage and protection from damaging loads.

R18-9-E306. 4.06 General Permit: Natural Seal Evapotranspiration Bed, Less Than 3000 Gallons Per Day Design Flow

- A. A 4.06 General Permit allows ~~for the use of~~ a natural seal evapotranspiration bed with less than 3000 gallons per day design flow receiving wastewater treated to a level equal to or better than that ~~provided by a 4.02 General Permit septic tank specified in R18-9-E302(B).~~ This general permit authorizes the discharge of wastewater from a septic tank that meets the requirements of R18-9-E314 to the general permitted disposal feature described in this Section.
1. Definition. For purposes of this Section, a “natural seal evapotranspiration bed” means a disposal technology characterized by a bed of sand or other ~~durable~~ media with an internal wastewater distribution system, contained on the bottom and sidewalls by an engineered liner consisting of natural soil and clay materials.
 2. An applicant may use a natural seal evapotranspiration bed if site conditions restrict soil infiltration or require reduction of the volume ~~or nitrogen content~~ of wastewater discharged to the native soil underlying the natural seal liner.
- B. Restrictions. Unless a person provides design documentation to show that a natural seal evapotranspiration bed will properly function, the person shall not install this technology if:
1. Average minimum temperature in any month is 20°F or less,
 2. Over 1/3 of the average annual precipitation falls in a 30-day period, or
 3. Design flow exceeds net evaporation.
- C. Performance. An applicant shall ensure that a natural seal evapotranspiration bed:
1. Minimizes discharge to the native soil through the natural seal liner,
 2. Maximizes wastewater disposed to the atmosphere by evapotranspiration, and
 3. Prevents ponding of wastewater on the bed surface and maintains an interval of unsaturated media directly beneath the bed surface.
- ~~D. Reference design.~~
- ~~1. An applicant may design and install a natural seal evapotranspiration bed with the performance required in subsection (C), following a reference design on file with the Department.~~
 - ~~2. The applicant shall file a form provided by the Department for supplemental information about the proposed system with the applicant’s Notice of Intent to Discharge.~~
- ~~E. Alternative design.~~ An applicant may submit an alternative to the reference design for a natural seal evapotranspiration bed that achieves the performance requirements specified in subsection (C) by following requirements specified in R18-9-A312(G).
- ~~1. The Department shall consider the submittal of an alternative design as one design change to establish the applicable fee under 18 A.A.C. 14.~~
 - ~~2. The applicant shall file a form provided by the Department for supplemental information about the proposed system with the applicant’s Notice of Intent to Discharge.~~
- D. Notice of Intent to Discharge.** In addition to the Notice of Intent to Discharge requirements in R18-9-A301(B) and R18-9-A309(B), an applicant shall submit:
1. Capillary rise potential test results for the media used to fill the evapotranspiration bed, unless sand meeting a D₅₀ of 0.1 millimeter (50 percent by weight of grains equal to or smaller than 0.1 millimeter) is used; and
 2. Water mass balance calculations used to size the evapotranspiration bed.
- E. Design requirements.** An applicant shall:
1. Ensure that the evapotranspiration bed is from 18 to 36 inches deep and shall calculate the bed design based on the capillary rise of the bed media, following the “Standard Test Method for Capillary-Moisture Relationships for Coarse- and Medium-Textured Soils by Porous-Plate Apparatus, D2325-68 (2000),” incorporated by reference in R18-9-E307(E), and the anticipated maximum frost depth;
 2. Ensure the media is sand or other durable material;
 3. Base design area calculations on a water mass balance for the winter months and the design seepage rate;
 4. Ensure that the natural seal liner is a durable, low-hydraulic conductivity liner and is accompanied by the liner performance specification and calculations for bottom and sidewall seepage rate;
 5. If a surfacing layer is used, use topsoil, dark cinders, decomposed granite, or similar landscaping material placed to a maximum depth of 2 inches and ensure that:
 - a. If topsoil is used as a surfacing layer for growth of landscape plants:
 - i. The topsoil is a fertile, friable soil obtained from well-drained arable land;
 - ii. The topsoil is free of nut grass, refuse, roots, heavy clay, clods, noxious weeds, or any other material toxic to plant growth;
 - iii. The pH of the topsoil is between 5.5 and 8.0;
 - iv. The plasticity index of the topsoil is between 3 and 15; and

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- v. The topsoil contains approximately 1-1/2 percent organic matter, by dry weight, either natural or added;
- b. If landscaping material other than topsoil is used as a surfacing layer, the material meets the following gradation:

<u>Sieve Size</u>	<u>Percent Passing</u>
<u>1"</u>	<u>100</u>
<u>1/2"</u>	<u>95-100</u>
<u>No. 4</u>	<u>90-100</u>
<u>No. 10</u>	<u>70-100</u>
<u>No. 200</u>	<u>15-70</u>

- 6. Use shallow-rooted, non-invasive, salt- and drought-tolerant evergreens if vegetation is planted on the evapotranspiration bed;
- 7. Install at least two observation ports to determine the level of the liquid surface of wastewater within the evapotranspiration bed;
- 8. Design the bed to pump out the saturated zone if accumulated salts or a similar condition impairs bed performance; and
- 9. Instead of the minimum vertical separation required under R18-9-A312(E), ensure that the minimum vertical separation from the bottom of the natural seal evapotranspiration bed liner to the seasonal high water table is at least 12 inches.
- F. Installation requirements. In addition to the applicable requirements in R18-9-A313(A), an applicant shall ensure that:
 - 1. The liner covers the bottom and all sidewalls of the bed and is installed on a stable base according to the manufacturer's installation specifications;
 - 2. If the inlet pipe passes through the liner, the joint is tightly sealed to minimize leakage during the operational life of the facility;
 - 3. The liner is leak tested under the supervision of an Arizona-registered professional engineer to confirm the design leakage rate; and
 - 4. A 2- to 4-inch layer of 1/2- to 1-inch gravel or crushed stone is placed around the distribution pipes within the bed. The applicant shall ensure that the filter cloth is placed on top of the gravel or crushed stone to prevent sand from settling into the gravel or crushed stone.
- G. Additional Discharge Authorization requirements. An applicant shall submit the satisfactory results of the leakage test required under subsection (F)(3) to the Department before the Department issues the Discharge Authorization.
- H. Operation and maintenance requirements. In addition to the applicable requirements in R18-9-A313(B), the permittee shall:
 - 1. Not allow irrigation of an evapotranspiration bed, and
 - 2. Protect the bed from vehicle loads and other damaging activities.

R18-9-E307. 4.07 General Permit: Lined Evapotranspiration Bed, Less Than 3000 Gallons Per Day Design Flow

- A. A 4.07 General Permit allows for the use of a lined evapotranspiration bed receiving wastewater treated to a level equal to or better than that ~~provided by a 4.02 General Permit septic tank specified in R18-9-E302(B). This general permit authorizes the discharge of wastewater from a septic tank that meets the requirements of R18-9-E314 to the general permitted disposal feature described in this Section.~~
 - 1. Definition. For purposes of this Section, a "lined evapotranspiration bed" means a disposal technology characterized by a bed of sand or other ~~usable~~ usable media with an internal wastewater distribution system contained on the bottom and sidewalls by an impervious synthetic liner.
 - 2. An applicant may use a lined evapotranspiration bed if site conditions restrict soil infiltration or require reduction or elimination of the volume of wastewater or nitrogen ~~load content of wastewater~~ discharged to the native soil.
 - 3. Provision of a reserve area is not required for a lined evapotranspiration bed.
- B. Restrictions. Unless a person provides design documentation to show that a lined evapotranspiration bed will properly function, the person shall not install this technology if:
 - 1. Average minimum temperature in any month is 20°F or less,
 - 2. Over 1/3 of average annual precipitation falls in a 30-day period, or
 - 3. Design flow exceeds net evaporation.
- C. Performance. An applicant shall ensure that a lined evapotranspiration bed:
 - 1. Prevents discharge to the native soil by a synthetic liner,

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2. Attains full disposal of wastewater to the atmosphere by evapotranspiration, and
 3. Prevents ponding of wastewater on the bed surface and maintains an interval of unsaturated media directly beneath the bed surface.
- D.** Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B) and R18-9-A309(B), an applicant shall submit:
1. Capillary rise potential test results for the media used to fill the evapotranspiration bed, unless sand meeting a D₅₀ of 0.1 millimeter (50% percent by weight of grains equal to or smaller than 0.1 millimeter in size) is used; and
 2. Water mass balance calculations used to size the evapotranspiration bed.
- E.** Design requirements. ~~An~~ In addition to the applicable requirements in R18-9-A312, an applicant shall:
1. Ensure that the evapotranspiration bed is from 18 to 36 inches deep and calculate the bed design on the basis of the capillary rise of the bed media, according to the "Standard Test Method for Capillary-Moisture Relationships for Coarse- and Medium-Textured Soils by Porous-Plate Apparatus, D2325-68 (2003)," published by the American Society for Testing and Materials, ~~(D-2325-68), reapproved 1994^{E1}~~, and the anticipated maximum frost depth. This material is incorporated by reference and does not include any later amendments or editions of the incorporated ~~matter~~ material. Copies of the incorporated material are available for inspection at the Arizona Department of Environmental Quality, 1110 W. Washington, Phoenix, AZ 85007 ~~and the Office of the Secretary of State~~, or may be obtained from the American Society for Testing and Materials International, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959;
 2. Ensure the media is sand or other durable material;
 - ~~2-3.~~ Base design area calculations on a water mass balance for the winter months;
 - ~~3-4.~~ Ensure that the evapotranspiration bed liner is a durable, low hydraulic conductivity synthetic liner that has a calculated bottom area and sidewall seepage rate of less than 550 gallons per acre per day;
 - ~~4-5.~~ If a surfacing layer is used, use topsoil, dark cinders, decomposed granite, or similar landscaping material placed to a maximum depth of ~~two~~ 2 inches. The applicant shall ensure that:
 - a. If topsoil is used as a surfacing layer for growth of landscape plants:
 - ~~a-i.~~ The topsoil is a fertile, friable soil obtained from well-drained arable land; ~~and~~
 - ~~ii.~~ The topsoil is free of nut grass, refuse, roots, heavy clay, clods, noxious weeds, or any other material toxic to plant growth; ~~and~~
 - ~~b-iii.~~ The pH factor does not exceed 8.0 or fall lower than 5.5; soluble salts do not exceed 1500 milligrams per liter; of the topsoil is between 5.5 and 8.0;
 - ~~iv.~~ The plasticity index of the topsoil is in the range of between three 3 and 15 inclusive; and
 - ~~v.~~ the soil The topsoil contains approximately 1-1/2% percent organic matter, by dry weight, either natural or added;
 - b. ~~The applicant shall ensure that~~ If another landscaping material is used for the as a surfacing layer, the material meets the following gradation:

Sieve Size	Percent Passing
1"	100
1/2"	95-100
No. 4	90-100
No. 10	70-100
No. 200	15-70

- ~~5-6.~~ Use shallow-rooted, non-invasive, salt and drought tolerant evergreens if vegetation is planted on the evapotranspiration bed;
- ~~6-7.~~ Install at least ~~one~~ two observation ~~port~~ ports to allow determination of the depth to the liquid surface of wastewater within the evapotranspiration bed;
- ~~7-8.~~ Design the bed to pump out the saturated zone if accumulated salts or a similar condition impairs bed performance- Provision of a reserve area is not required for a lined evapotranspiration bed; and
- ~~8-9.~~ Instead of the minimum vertical separation required under R18-9-A312(E), ensure that the minimum vertical separation from the bottom of the evapotranspiration bed liner to the surface of the seasonal high water table or impervious layer or formation is at least 12 inches.

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- F. Installation requirements. ~~An~~ In addition to the applicable requirements in R18-9-A313(A), an applicant shall ensure that:
1. All liner seams are factory fabricated or field welded according to manufacturer's specifications ~~not inconsistent with this Chapter~~. The applicant shall ensure that:
 2. ~~a-~~ The liner covers the bottom and all sidewalls of the bed and is cushioned on the top and bottom with layers of sand at least ~~two~~ 2 inches thick or other ~~equivalently~~ puncture-protective material; ~~and~~
 3. ~~b-~~ If the inlet pipe passes through the liner, the joint is tightly sealed to minimize leakage during the operational life of the facility;
 - ~~2-4~~ The liner is leak tested under the supervision of an Arizona-registered professional engineer; ~~and~~
 - ~~3-5~~ A ~~two- 2-~~ to ~~four 4-~~ inch layer of 1/2- to ~~one 1-~~ inch gravel or crushed stone is placed around the distribution pipes within the bed. The applicant shall place filter cloth on top of the gravel or crushed stone to prevent sand from settling into the crushed stone or gravel.
- G. Additional ~~Verification of General Permit Conformance~~ Discharge Authorization requirements. An applicant shall submit the ~~sealed liner test results of the liner test sealed by an Arizona-registered professional engineer~~ to the Department ~~before for issuance of the Verification of General Permit Conformance Discharge Authorization~~.
- H. Operation and maintenance requirements. In addition to the applicable requirements in R18-9-A313(B), the permittee shall:
1. ~~Irrigation~~ Not allow irrigation of an evapotranspiration bed ~~is not allowed; and~~
 2. ~~A permittee shall protect~~ Protect the bed from vehicle loads and other damaging activities.

R18-9-E308. 4.08 General Permit: Wisconsin Mound, Less Than 3000 Gallons Per Day Design Flow

- A. A 4.08 General Permit allows for the use of a Wisconsin mound with a design flow of less than 3000 gallons per day receiving wastewater treated to a level equal to or better than that provided by a 4.02 General Permit septic tank specified in R18-9-E302(B).
1. Definition. For purposes of this Section, a "Wisconsin mound" means a disposal technology characterized by:
 - a. An above-grade bed system that blends with the land surface into which is dispensed pressure-dosed wastewater from a septic tank or other upstream treatment device,
 - b. Dispersal of wastewater under unsaturated flow conditions through the engineered media system contained in the mound, and
 - c. Wastewater treated by passage through the mound before percolation into the native soil below the mound.
 2. An applicant may use a Wisconsin mound if:
 - ~~a. the~~ The native soil has excessively high or low permeability,
 - ~~b. there~~ There is little native soil overlying fractured or excessively permeable rock, or
 - ~~c. a~~ A reduction in minimum vertical separation is desired.
- B. Performance. An applicant shall design a Wisconsin mound ~~on the basis so~~ that treated wastewater released to the native soil meets the following criteria:
1. Performance Category A.
 - ~~a. TSS of 20 milligrams per liter, 30-day arithmetic mean;~~
 - ~~b. BOD₅ of 20 milligrams per liter, 30-day arithmetic mean;~~
 - ~~c. Total nitrogen (as nitrogen) of 53 milligrams per liter, 5-month arithmetic mean; and~~
 - ~~d. Total coliform level of 1000 (Log₁₀ 3.0) colony forming units per 100 milliliters, 95th percentile; or~~
 2. Performance Category B.
 - ~~1-a.~~ TSS of 30 milligrams per liter, 30-day arithmetic mean;
 - ~~2-b.~~ BOD₅ of 30 milligrams per liter, 30-day arithmetic mean;
 - ~~3-c.~~ Total nitrogen (as nitrogen) of 53 milligrams per liter, 5-month arithmetic mean; and
 - ~~4-d.~~ Total coliform level of 300,000 (Log₁₀ 5.5) colony forming units per 100 milliliters, 95th percentile.
- C. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B) and R18-9-A309(B), an applicant shall submit:
1. Specifications for the internal wastewater distribution system media proposed for use in the Wisconsin mound;
 2. Two scaled or dimensioned cross sections of the mound (~~1~~ one of the shortest basal area footprint dimension and one of the lengthwise dimension); and
 3. Design calculations following the "Wisconsin Mound Soil Absorption System: Siting, Design, and Construction Manual," published by the University of Wisconsin – Madison, January 1990 Edition (the Wisconsin Mound Manual). This material is incorporated by reference and does not include any later amendments or editions of the incorporated ~~matter~~ material. Copies of the incorporated material are available for inspection at the Arizona Department of Environmental Quality, 1110 W. Washington, Phoenix, AZ 85007 ~~and the Office of the Secretary of State~~, or may be obtained from the University of Wisconsin – Madison, SSWMP, 1525 Observatory Drive, Room 345, Madison, WI 53706.
- D. Design requirements. ~~An~~ In addition to the applicable requirements in R18-9-A312, an applicant shall ensure that:
1. Pressure dosed wastewater is delivered into the Wisconsin mound through a pressurized line and secondary distribution lines into an engineered aggregate infiltration bed, or equivalent system, in conformance with R18-9-E304 and

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- the Wisconsin Mound Manual. The applicant shall ensure that the aggregate is washed;
2. Wastewater is ~~distributed in the aggregate infiltration bed and applied to the mound bed inlet surface of the mound media at the following rates:~~
 - a. ~~Not not~~ more than 1.0 gallon per day per square foot of mound bed inlet surface if the mound bed media conforms with the "Standard Specification for Concrete Aggregates, C33-03 (2003)," (C 33-99a^{E1}), published by the American Society for Testing and Materials, ~~approved July 10, 1999,~~ and the Wisconsin Mound Manual, except if cinder sand is used that is the appropriate grade with not more than 5% percent passing a #200 screen. ~~The Standard Specification for Concrete Aggregates," (C 33-99a^{E1}), approved July 10, 1999,~~ This material is incorporated by reference and does not include any later amendments or editions of the incorporated ~~matter~~ material. Copies of the incorporated material are available for inspection at the Arizona Department of Environmental Quality, 1110 W. Washington, Phoenix, AZ 85007 ~~and the Office of the Secretary of State,~~ or may be obtained from the American Society for Testing and Materials International, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959. The applicant shall:
 - a. ~~i-~~ For cinder sand, ensure that the rate is not more than 0.8 gallons per day per square foot of mound bed inlet surface; and
 - b. ~~ii-~~ Wash the media used for the mound bed;
 - b. ~~A rate, configuration, or material for the infiltration bed or the mound bed submitted under R18-9-A312(G). The applicant shall ensure that the submittal includes supporting analyses for the design configuration, materials, and loading rates.~~
 3. The aggregate infiltration bed and mound bed is capped by coarser textured soil, such as sand, sandy loam, or silt loam. ~~Silty An applicant shall not use silty clay, clay loam, or clays are prohibited;~~
 4. The cap material is covered by topsoil, following the procedure in the Wisconsin Mound Manual, and the topsoil is capable of supporting vegetation, is not clay, and is graded to drain;
 5. The top and bottom surfaces of the aggregate infiltration bed are level and do not exceed 10 feet in width. ~~The applicant shall ensure and~~ that:
 - a. The minimum depth of the aggregate infiltration bed is ~~nine~~ 9 inches, and
 - b. Synthetic filter fabric permeable to water and air and capable of supporting the cap and topsoil load is placed on the top surface of the aggregate infiltration bed;
 6. The minimum depth of mound bed media is:
 - a. Performance Category A, 24 inches; or
 - b. Performance Category B, 12 inches;
 7. The maximum allowable side slope of the mound bed, cap material, and topsoil is not more than one vertical to three horizontal;
 8. Ports for inspection and monitoring are provided to verify performance, including verification of unsaturated flow within the aggregate infiltration bed. The applicant shall:
 - a. Install a vertical PVC pipe and cap with a minimum diameter of ~~four~~ 4 inches as an inspection port at the end of the disposal line, and
 - b. Install the pipe with a physical restraint to maintain pipe position;
 9. The main pressurized line and secondary distribution lines for the aggregate infiltration bed are equipped at appropriate locations with cleanouts to grade;
 10. ~~Setbacks~~ The following requirements and the setbacks specified in R18-9-A312(C) are observed; ~~except that the applicant shall:~~
 - a. Increase setbacks for the following downslope features at least 30 feet from the toe of the mound system:
 - i. Property line,
 - ii. Driveway,
 - iii. Building,
 - iv. Ditch or interceptor drain, or
 - v. Any other feature that impedes water movement away from the mound; and
 - b. Ensure that no upslope natural feature or improvement channels surface water or groundwater to the mound area;
 11. The ~~active~~ portion of the basal area of native soil below the mound conforms to the Wisconsin Mound Manual. The applicant shall:
 - a. Calculate the absorption of wastewater into the native soil for only the effective basal area;
 - b. Apply the soil ~~application rates~~ absorption rate specified in R18-9-A312(D). The applicant may increase allowable loading rate to the mound bed inlet surface ~~may be increased~~ up to 1.6 times if the wastewater dispersed to the mound is pretreated to reduce the sum of TSS and BOD₅ to 60 mg/l or less. The applicant may increase the soil ~~application~~ absorption rate ~~may be increased~~ to not more than 0.20 gallons per day per square foot of ~~effective~~ basal area if the following slowly permeable soils underlie the mound:
 - i. Sandy clay loam, clay loam, silty clay loam, or finer with weak platy structure; or

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- ii. Sandy clay loam, clay loam, silty clay loam, or silt loam with massive structure;
- 12. The slope of the native soil at the basal area does not exceed 25% percent, and a slope stability analysis is performed whenever the basal area or site slope within 50 horizontal feet from the mound system footprint exceeds 15% percent.
- E. Installation. An applicant shall:
 - 1. Prepare native soil for construction of a Wisconsin mound system. The applicant shall:
 - a. Mow vegetation and cut down trees in the vicinity of the basal area site to within ~~two~~ 2 inches of the surface;
 - b. Leave in place boulders and tree stumps and other herbaceous material that would excessively ~~alters~~ alter the soil structure if removed after mowing and cutting;
 - c. Plow native soil serving as the basal area footprint along the contours to ~~seven 7-~~ to ~~eight 8-~~ inches inch depth;
 - d. Not substitute rototilling for plowing; and
 - e. Begin mound construction immediately after plowing;
 - 2. Place each layer of the bed system to prevent differential settling and promote uniform density; and
 - 3. Use the Wisconsin Mound Manual to guide any other detail of installation. ~~Installation~~ The applicant may vary installation procedures and criteria may vary depending on mound design but shall ~~be~~ use installation procedures and criteria that are at least equivalent to those in the Wisconsin Mound Manual.
- F. Operation and maintenance requirements. In addition to the applicable requirements specified in R18-9-A313(B), the permittee shall:
 - 1. If an existing mound system shows evidence of overload or hydraulic failure, ~~consider~~ conduct the following ~~measures~~ sequence of evaluations:
 - a. ~~Verification of~~ Verify the actual loading and performance of the pretreatment system, ~~and verification of~~
 - b. Verify the watertightness of the pretreatment and dosing tanks;
 - ~~b-c. Determination of~~ Determine the dosing rates and dosing intervals to the aggregate infiltration bed and ~~comparison~~ compare it with the original design to evaluate the presence or absence of saturated conditions in the aggregate infiltration bed;
 - ~~e-d.~~ If the above steps in subsections (F)(1)(a) through (c) do not indicate an anomalous condition, ~~evaluation of~~ evaluate the site and recalculation of the disposal capability to determine if mound lengthening ~~of the mound~~ is feasible;
 - ~~d-e.~~ Site Determine if site modifications are possible including; changing surface drainage patterns at upgrade locations and lowering the groundwater level by installing interceptor drains to reduce native soil saturation at shallow levels; and
 - ~~e-f.~~ Increasing Determine if the basal area can be increased, consistent with R18-9-A309(A)(9)(b)(iv) which is most efficient if the bed length is increased.
 - 2. ~~If the mound needs to be expanded in size, submit a new Notice of Intent to Discharge for this modification; and~~
 - 3-2. Specify Prepare servicing and waste disposal procedures and task schedules necessary for clearing the main pressurized wastewater line and secondary distribution lines, septic tank effluent filter, pump intake, and controls.

R18-9-E309. 4.09 General Permit: Engineered Pad System, Less Than 3000 Gallons Per Day Design Flow

- A. A 4.09 General Permit allows for the use of an engineered pad system receiving wastewater treated to a level equal to or better than that ~~provided by a 4.02 General Permit septic tank~~ specified in R18-9-E302(B).
 - 1. Definition. For purposes of this Section, ~~the an~~ “engineered pad system” means a treatment and disposal technology characterized by:
 - a. The delivery of ~~treated~~ pretreated wastewater by gravity or pressure distribution to the engineered pad and sand bed assembly, ~~which then disperses the wastewater followed by dispersal of the wastewater~~ into the native soil; and
 - b. ~~Passage of the treated wastewater~~ Wastewater movement through a ~~pad and~~ the engineered pad and sand bed assembly by gravity under unsaturated flow conditions to provide additional passive biological treatment; and
 - c. ~~Provision of additional passive biological treatment to the wastewater and reduced biomat formation at the inlet absorption surface of the underlying native soil.~~
 - 2. The applicant may use an engineered pad system if:
 - a. The native soil is excessively permeable,
 - b. There is little native soil overlying fractured or excessively permeable rock, or
 - c. The available area is limited for installing a disposal ~~field system~~ works authorized by R18-9-E302.
- B. Performance. An applicant shall ensure that:
 - 1. ~~Any proprietary~~ The engineered pad system ~~previously approved by the Department~~ is designed on the basis so that the ~~released~~ treated wastewater released to the native soil meets the following criteria:
 - a. TSS of 50 milligrams per liter, 30-day arithmetic mean;
 - b. BOD₅ of 50 milligrams per liter, 30-day arithmetic mean;
 - c. Total nitrogen (as nitrogen) of 53 milligrams per liter, 5-month arithmetic mean; and
 - d. Total coliform level of 1,000,000 (Log₁₀ 6) colony forming units per 100 milliliters, 95th percentile; or
 - 2. ~~Any engineered pad not previously approved by the Department is designed on the basis that the treated wastewater~~

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~~released to the native soil does not exceed the performance values specified for the systems described in R18-9-E302. If an applicant wishes to use different performance values, the Department shall review the system as established under R18-9-A309(E). The engineered pad system is designed to meet any other performance, loading rate, and configuration criteria specified in the reviewed product list maintained by the Department as required under R18-9-A309(E).~~

- C. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B) and R18-9-A309(B), an applicant shall submit design materials and construction specifications for the engineered pad system.
- D. Design requirements. ~~An~~ In addition to the applicable requirements in R18-9-A312, an applicant shall ensure that:
 - 1. Gravity and pressurized wastewater delivery is from a septic tank or intermediate watertight chamber equipped with a pump and controls. The applicant shall ensure that:
 - a. Delivered wastewater is distributed onto the top of the engineered pad system and achieves even distribution by good engineering practice, and
 - b. The dosing rate for pressurized wastewater delivery is at least four doses per day and no more than 24 doses per day;
 - 2. The sand bed consists of mineral sand washed to conform to the “Standard Specification for Concrete Aggregates, C33-03 (2003),” ~~(C-33-99a^{E1})~~, which is incorporated by reference in ~~R18-9-E308(D)(2)(a)~~ R18-9-E308(D)(2), unless the performance testing and design specifications of the engineered pad manufacturer justify a substitute specification. The applicant shall ensure that:
 - a. The sand bed design provides for the placement of at least ~~six~~ 6 inches of sand bed material below and along the perimeter of each pad, and
 - b. The contact surface between the bottom of the sand bed ~~contact with and~~ the native soil ~~absorption system is~~ level;
 - 3. The spacing between adjacent two-pad-wide rows is at least two times the distance between the bottom of the distribution pipe and the bottom of the sand bed or 5 feet, whichever is greater.
 - ~~3-4.~~ The wastewater distribution system installed on the top of the engineered pad system is covered with a breathable geotextile material ~~that is itself and the breathable geotextile material is~~ covered with at least 10 inches of backfill.
 - a. The applicant shall ensure that rocks and cobbles are removed from backfill cover and grade the backfill for drainage.
 - b. The applicant may place the engineered pad system above grade, partially bury it, or fully bury it depending on site and service circumstances;
 - ~~4-5.~~ The engineered pad system is constructed with durable materials and capable of withstanding stress from installation and operational service; and
 - ~~5-6.~~ At least two inspection ports are installed in the engineered pad system to confirm unsaturated wastewater treatment conditions at diagnostic locations.
- E. Installation requirements. In addition to the applicable requirements ~~specified in R18-9-A313, R18-9-A313(A)~~ an applicant shall place sand media to obtain a uniform density of 1.3 to 1.4 grams per cubic centimeter.
- F. Operation and maintenance requirements. In addition to the applicable requirements ~~specified in R18-9-A313-R18-9-A313(B)~~, an applicant shall inspect the backfill cover for physical damage or erosion and promptly repair the cover, if necessary.

R18-9-E310. 4.10 General Permit: Intermittent Sand Filter, Less Than 3000 Gallons Per Day Design Flow

- A. A 4.10 General Permit allows ~~for the use of~~ an intermittent sand filter receiving wastewater treated to a level equal to or better than that ~~provided by a 4.02 General Permit septic tank specified in R18-9-E302(B).~~
 - 1. Definition. For purposes of this Section, an “intermittent sand filter” means a treatment technology characterized by:
 - a. The pressurized delivery of pretreated wastewater to an engineered sand bed in a containment vessel equipped with an underdrain system or designed as a bottomless filter;
 - b. Delivered wastewater dispersed throughout the sand media by periodic doses from the delivery pump to maintain unsaturated flow conditions in the bed; and
 - c. Wastewater that is treated during passage through the media, collected by a bed underdrain chamber, and removed by pump or gravity to the disposal works, or wastewater that percolates downward directly into the native soil as part of a bottomless filter design.
 - 2. An applicant may use an intermittent sand filter if:
 - a. The native soil is excessively permeable,
 - b. There is little native soil overlying fractured or excessively permeable rock, or
 - c. ~~Reduction~~ The applicant desires a reduction in setback distances or minimum vertical separation ~~is desired.~~
- B. Performance. An applicant shall ensure that:
 - 1. An intermittent sand filter with underdrain system is designed ~~on the basis so~~ so that it produces treated wastewater that meets the following criteria:
 - a. TSS of 10 milligrams per liter, 30-day arithmetic mean;

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- b. BOD₅ of 10 milligrams per liter, 30-day arithmetic mean;
 - c. Total nitrogen (as nitrogen) of 40 milligrams per liter, 5-month arithmetic mean; and
 - d. Total coliform level or 1000 (Log₁₀ 3) colony forming units per 100 milliliters, 95th percentile; or
- 2. An intermittent sand filter with a bottomless filter ~~design~~ is designed ~~on the basis so~~ that it produces the treated wastewater released to the native soil ~~that~~ meets the following criteria:
 - a. TSS of 20 milligrams per liter, 30-day arithmetic mean;
 - b. BOD₅ of 20 milligrams per liter, 30-day arithmetic mean;
 - c. Total nitrogen (as nitrogen) of 53 milligrams per liter, five-month arithmetic mean; and
 - d. Total coliform level of 100,000 (Log₁₀ 5) colony forming units per 100 milliliters, 95th percentile.
- C. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B) and R18-9-A309(B), an applicant shall submit specifications for the media proposed for use in the intermittent sand filter.
- D. Design requirements. ~~An~~ In addition to the applicable requirements in R18-9-A312, an applicant shall ensure that:
 - 1. Pressurized wastewater delivery is from the septic tank or separate watertight chamber with a pump sized and controlled to deliver the pretreated wastewater to the top of the intermittent sand filter. The applicant shall ensure that the dosing rate is at least ~~four~~ 4 doses per day and not more than 24 doses per day;
 - 2. The pressurized wastewater delivery system provides even distribution in the sand filter through good engineering practice. The applicant shall:
 - a. Specify all necessary controls, ~~pipe~~ pipes, valves, orifices, filter cover materials, gravel, or other distribution media, and monitoring and servicing components in the design documents; and
 - b. Ensure that the cover and topsoil is ~~six~~ 6 to 12 inches in depth and graded to drain;
 - 3. The sand filter containment vessel is watertight, structurally sound, durable, and capable of withstanding stress from installation and operational service. ~~Intermittent~~ The applicant may place the intermittent sand filter ~~placement may~~ be above grade, partially buried, or fully buried depending on site and service circumstances;
 - 4. Media used in the intermittent sand filter is mineral sand and that the media is washed and conforms to "Standard Specification for Concrete Aggregates, C33-03," ~~(C33-99a^{ET})~~, which is incorporated by reference in ~~R18-9-E308(D)(2)(a)~~ R18-9-E308(D)(2);
 - 5. The sand media depth is a minimum of 24 inches with the top and bottom surfaces level and the maximum wastewater loading rate is ~~1-2~~ 1.0 gallons per day per square foot of inlet surface at the rated daily design flow;
 - 6. The underdrain system:
 - a. Is within the containment vessel;
 - b. Supports the filter media and all overlying loads from the unsupported construction above the top surface of the sand media;
 - c. Has sufficient void volume above the normal high level of the intermittent sand filter effluent to prevent saturation of the bottom of the sand media by a 24-hour power outage or pump malfunction; and
 - d. Includes necessary monitoring, inspection, and servicing features;
 - 7. Inspection ports are installed in the distribution media and in the underdrain;
 - 8. The bottomless filter is designed similar to the underdrain system, except that the sand media is positioned on top of the native soil absorption surface. The applicant shall ensure that companion modifications are made that eliminate the containment vessel bottom and underdrain and relocate the underdrain inspection port to ensure reliable indication of the presence or absence of water saturation in the sand media;
 - 9. The native soil absorption system is designed to ensure that the linear loading rate does not exceed site disposal capability; and
 - 10. The bottomless sand filter discharge rate per unit area to the native soil does not exceed the adjusted soil ~~application~~ absorption rate for the quality of wastewater specified in subsection (B)(2).
- E. Installation requirements. ~~An~~ In addition to the applicable requirements in R18-9-A313(A), an applicant shall place the containment vessel, underdrain system, filter media, and pressurized wastewater distribution system in an excavation with adequate foundation and each layer installed to prevent differential settling and promote a uniform density throughout of 1.3 to 1.4 grams per cubic centimeter within the sand media.
- F. Operation and maintenance requirements. The applicant shall follow the applicable requirements ~~specified~~ in R18-9-A313(B).

R18-9-E311. 4.11 General Permit: Peat Filter, Less Than 3000 Gallons Per Day Design Flow

- A. A 4.11 General Permit allows for the use of a peat filter receiving wastewater treated to a quality level equal to or better than that ~~provided by a 4.02 General Permit septic tank~~ specified in R18-9-E302(B).
 - 1. Definition. For purposes of this Section, a "peat filter" means a disposal technology characterized by:
 - a. The dosed delivery of treated wastewater to the peat bed, which can be a manufactured module or a disposal bed excavated in native soil and filled with compacted peat;
 - b. Wastewater passing through the peat that is further treated by removal of positively charged molecules, filtering, and biological activity before entry into native soil; and
 - c. If the peat filter system is constructed as a disposal bed filled with compacted peat, wastewater that is absorbed

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- into native soil at the bottom and sides of the bed.
2. An applicant may configure a modular system if a portion of the wastewater that has passed through the peat filter is recirculated back to the pump chamber.
3. An applicant may use a peat filter system if:
 - a. The native soil is excessively permeable,
 - b. There is little native soil overlying fractured or excessively permeable rock,
 - c. ~~Reduction~~ A reduction in setback distances or minimum vertical separation is desired, or
 - d. Cold weather ~~reduces effectiveness~~ inhibits performance of other treatment or disposal sites technologies.
- B. Performance.** An applicant shall ensure that a peat filter is designed ~~on the basis so~~ that it produces treated wastewater that meets the following criteria:
 1. TSS of 15 milligrams per liter, 30-day arithmetic mean;
 2. BOD₅ of 15 milligrams per liter, 30-day arithmetic mean;
 3. Total nitrogen (as nitrogen) of 53 milligrams per liter, 5-month arithmetic mean; and
 4. Total coliform level of 100,000 (Log₁₀ 5) colony forming units per 100 milliliters, 95th percentile.
- C. Notice of Intent to Discharge.** In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B) and R18-9-A309(B), an applicant shall submit:
 1. Specifications for the peat media proposed for use in the peat filter or provided in the peat module, including:
 - a. ~~the porosity, surface area, and~~ Porosity;
 - b. Degree of humification;
 - c. pH;
 - d. Particle size distribution;
 - e. ~~moisture~~ Moisture content;
 - ~~a-f.~~ A statement of whether the peat is air dried, and whether the peat is from sphagnum moss or bog cotton; and
 - ~~b-g.~~ A description of the degree of decomposition;
 2. Specifications for installing the peat media; and
 3. If a peat module is used:
 - a. The name and address of the manufacturer,
 - b. The model number, and
 - c. A copy of the manufacturer's warranty.
- D. Design requirements.**
 1. If a pump tank is used to dose the peat module or bed, an applicant shall:
 - a. Ensure that ~~liquid volume meets or exceeds the calculated dose plus the required storage capacity and the pump tank is sized to contain the dose volume and~~ a reserve volume above the high water alarm ~~to that will~~ contain the volume of daily design flow ~~volume~~; and
 - b. Use a control panel with a programmable timer to dose ~~approximately 1/12 of the maximum daily design flow plus the drain back, if applicable, every two hours at the applicable loading rate.~~
 2. Peat module system. ~~The~~ In addition to the applicable requirements in R18-9-A312, the applicant shall:
 - a. Size the gravel bed supporting the peat filter modules to allow it to act as a disposal ~~field works~~. ~~The applicant shall and~~ ensure that the bed is level, long, and narrow, and installed on contour to optimize lateral movement away from the disposal area;
 - b. ~~Ensure that the minimum module system size is adequate to treat 500 gallons per day. The applicant shall add modules to accommodate additional design flow;~~
 - ~~e-b.~~ For modules designed to allow wastewater flow through the peat filter and base material into underlying native soil, size the base on which the modules rest to accommodate the soil absorption rate of the native soil;
 - ~~d-c.~~ Place fill over the module so that it conforms to the manufacturer's specification ~~if the specification is consistent with this Chapter~~. If the fill is planted, the applicant shall use only grass or shallow rooted plants; and
 - ~~e-d.~~ Ensure that the peat media depth is ~~a minimum of at least 24 inches, and~~ the peat is installed with the top and bottom surfaces level. ~~The applicant shall and ensure that the maximum wastewater loading rate is 5.0 5.5 gallons per day per square foot of inlet surface at the rated daily design flow, unless the Department approves a different wastewater loading rate under R18-9-A309(E).~~
 3. Peat filter bed system. ~~The~~ In addition to the applicable requirements in R18-9-A312, the applicant shall ensure that:
 - a. The bed is filled with peat derived from sphagnum moss and compacted according to the installation specification;
 - b. The maximum wastewater loading rate is ~~one~~ 1 gallon per day per square foot of inlet surface at the rated daily design flow;
 - c. At least 24 inches of installed peat underlies the distribution piping and 10 to 14 inches of installed peat overlies the piping;
 - d. The cover material over the peat filter bed is slightly mounded to promote runoff of rainfall. The applicant shall not place additional fill over the peat; and

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- e. ~~The peat is derived from decomposed sphagnum moss or roots of the plant Eriophorum (bog cotton). The applicant shall ensure that the peat is air dried, with a porosity greater than 90% percent, and a surface area at least 190 square meters per gram particle size distribution of 92 to 100 percent passing a No. 4 sieve and less than 8 percent passing a No. 30 sieve.~~
- E. Installation requirements. ~~The~~ In addition to the applicable requirements in R18-9-A313(A), the applicant shall:
 - 1. Peat module system.
 - a. Compact the bottom of all excavations for the filter modules, pump, aerator, and other components to provide adequate foundation, slope the bottom toward the discharge to minimize ponding, and ensure that the bottom is flat, and free of debris, rocks, and sharp objects. If the excavation is uneven or rocky, the applicant shall use a bed of sand or pea gravel to create an even, smooth surface;
 - b. Place the peat filter modules on a level, ~~six~~ 6-inch deep gravel bed;
 - c. Place backfill around the modules and grade the backfill to divert surface water away from the modules;
 - d. Not place objects on or move objects over the system area that might damage the module containers or restrict airflow to the modules;
 - e. Cover gaps between modules to prevent damage to the system;
 - f. Fit each system with at least one sampling port that allows collection of wastewater at the exit from the final treatment module;
 - g. Provide the modules and other components with anti-buoyancy devices to ensure stability in the event of flooding or high water table conditions; and
 - h. Provide a mechanism for draining the filter module inlet line; or
 - 2. Peat filter bed system. ~~The applicant shall:~~
 - a. Scarify the bottom and sides of the leaching bed excavation to remove any smeared surfaces; and ~~The applicant shall:~~
 - i. Unless directed by an installation specification consistent with this Chapter, place peat media in the excavation in ~~six~~ 6-inch lifts; and
 - ii. Compact each lift before the next lift is added. The applicant shall take care to avoid compaction of the underlying native soil;
 - b. Lay distribution pipe in trenches cut in the compacted peat; ~~The applicant shall; and~~
 - i. Ensure that at least ~~three~~ 3 inches of aggregate underlie the pipe to reduce clogging of holes or scouring of the peat surrounding the pipe, and
 - ii. Place peat on top of and around the sides of the pipes.
- F. Operation and maintenance requirements. In addition to the applicable requirements in ~~R18-9-A313~~ R18-9-A313(B), the permittee shall inspect the finished grade over the peat filter for proper drainage, protection from damaging loads, and root invasion of the wastewater distribution system and perform maintenance as needed.

R18-9-E312. 4.12 General Permit: Textile Filter, Less Than 3000 Gallons Per Day Design Flow

- A. A 4.12 General Permit allows for the use of a textile filter receiving wastewater treated to a level equal to or better than that ~~provided by a 4.02 General Permit septic tank specified in R18-9-E302(B).~~
 - 1. Definition. For purposes of this Section, a “textile filter” means a disposal technology characterized by:
 - a. The flow of wastewater into a packed bed filter in a containment structure or structures. The packed bed filter uses a textile filter medium with high porosity and surface area; and
 - b. The textile filter medium provides further treatment by removing suspended material from the wastewater by physical straining, and reducing nutrients by microbial action.
 - 2. An applicant may use a textile filter in conjunction with a two-compartment septic tank or a two-tank system if the second compartment or tank is used as a recirculation and blending tank. ~~A~~ The applicant shall divert a portion of the wastewater flow from the textile filter ~~shall be diverted~~ back into the second tank for further treatment.
 - 3. An applicant may use a textile filter if: ~~nitrogen reduction is desired or as an alternative to a sand filter if delivering sand with the required properties is difficult or expensive.~~
 - a. Nitrogen reduction is desired.
 - b. The native soil is excessively permeable.
 - c. There is little native soil overlying fractured or excessively permeable rock, or
 - d. A reduction in setback distances or minimum vertical separation is desired.
- B. Performance. An applicant shall ensure that a textile filter is designed ~~on the basis so~~ so that it produces treated wastewater that meets the following criteria:
 - 1. TSS of 15 milligrams per liter, 30-day arithmetic mean;
 - 2. BOD₅ of 15 milligrams per liter, 30-day arithmetic mean;
 - 3. Total nitrogen (as nitrogen) of 30 milligrams per liter, five-month arithmetic mean, or 15 milligrams, five-month arithmetic mean per liter if documented under subsection (C)(4); and
 - 4. Total coliform level of 100,000 (Log₁₀ 5) colony forming units per 100 milliliters, 95th percentile.
- C. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B)

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and R18-9-A309(B), an applicant shall submit:

1. The name and address of the filter manufacturer;
2. The filter model number;
3. A copy of the manufacturer's filter warranty;
4. If the system is for nitrogen reduction to 15 milligrams per liter, five-month arithmetic mean, specifications on the nitrogen reduction performance of the filter system and corroborating third-party test data;
5. The manufacturer's operation and maintenance recommendations to achieve a 20-year operational life; and
6. If a pump or aerator is required for proper operation, the pump or aerator model number and a copy of the manufacturer's warranty.

D. Design requirements. ~~An~~ In addition to the applicable requirements in R18-9-A312, an applicant shall ensure that:

1. The textile medium has a porosity of greater than 80% percent;
2. The wastewater is delivered to the textile filter by gravity flow or a pump;
3. If a pump ~~tank~~ is used to dose the textile ~~module or modules~~ filter, ~~it meets the pump and appurtenances meet the following criteria:~~
 - a. The textile media loading rate and wastewater recirculation rate are based on calculations that conform with performance data listed in the reviewed product list maintained by the Department as required under R18-9-A309(E).
 - b. Liquid volume equals or exceeds the calculated dose plus the required storage capacity. The tank and recirculation components are sized to contain the dose volume and a reserve volume above the high water level alarm to that will contain the volume of daily design flow volume, and
 - ~~b-c.~~ A control panel with a programmable timer is used to dose approximately 1/12 of the maximum daily design flow (plus the drain-back if applicable) every two hours the textile media at the applicable loading rate and wastewater recirculation rate.

E. Installation requirements. ~~An~~ In addition to the applicable requirements in R18-9-A313(A), an applicant shall:

1. Before placing the filter modules, slope the bottom of the excavation for the modules toward the discharge point to minimize ponding;
2. Ensure that the bottom of all excavations for the filter modules, pump, aerator, or other components is level and free of debris, rocks, and sharp objects. If the excavation is uneven or rocky, the applicant shall use a bed of sand or pea gravel to create an even, smooth surface;
3. Provide the modules and other components with anti-buoyancy devices to ensure they remain in place in the event of high water table conditions; and
4. Provide a mechanism for draining the filter module inlet line.

F. Operation and maintenance requirements. In addition to the applicable requirements in R18-9-A313(B), the permittee shall not flush corrosives or other materials known to damage the textile material into any drain that transmits wastewater to the on-site wastewater treatment facility.

R18-9-E313. 4.13 General Permit: RUCK® Denitrifying System Using Separated Wastewater Streams, Less Than 3000 Gallons Per Day Design Flow

A. A 4.13 General Permit allows ~~residential applications~~ for the use of a RUCK® separated wastewater streams, denitrifying system for a dwelling.

1. Definition. For purposes of this Section a "RUCK® system denitrifying system using wastewater streams" means a ~~proprietary gravity flow treatment and disposal system for residential applications a dwelling that requires segregated separate plumbing drains for conducting dishwater dishwasher, kitchen sink, and toilet flush water to a black water tank wastewater treatment tank "A" and all other wastewater to a gray water tank wastewater treatment tank "B."~~
 - a. Treated wastewater from ~~each tank tanks "A" and "B"~~ is delivered to a ~~proprietary, an~~ engineered composite disposal bed system that includes an upper distribution pipe to deliver treated ~~black water wastewater from tank "A"~~ to a ~~proprietary, columnar celled, sand-filled bed.~~
 - b. The wastewater drains downward into a sand bed, then into a pea gravel bed with an internal distribution pipe system that delivers the treated ~~gray water wastewater from tank "B."~~
 - c. The entire composite bed is constructed within an excavation about ~~six~~ 6 feet deep.
 - d. The system ~~typically~~ operates under gravity flow from ~~the black water and gray water pretreatment tanks tanks "A" and "B."~~
 - e. ~~A proprietary~~ An engineered sampling assembly is installed at the midpoint of the disposal line run and at the base of the composite bed during construction to monitor system performance.
2. An applicant may use a RUCK® separated wastewater streams, denitrifying system, which is typically limited to soil conditions where a standard system described in R18-9-E302 is acceptable, if the where total nitrogen content in the wastewater is reduced reduction is required under this Article before release to the native soil.

B. Performance. An applicant shall ensure that a RUCK® separated wastewater streams, denitrifying system is designed on the basis so that the treated wastewater released to the native soil meets the following criteria:

1. TSS of 30 milligrams per liter, 30-day arithmetic mean;

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2. BOD₅ of 30 milligrams per liter, 30-day arithmetic mean;
 3. Total nitrogen (as nitrogen) of 30 milligrams per liter, five-month arithmetic mean, ~~or 15 milligrams per liter, five-month arithmetic mean, if demonstrated under subsection (D); and~~
 4. Total coliform level of 1,000,000 (Log₁₀ 6) colony forming units per 100 milliliters, 95th percentile.
- C.** Notice of Intent to Discharge. The applicant shall comply with the Notice of Intent to Discharge requirements in R18-9-A301(B) and R18-9-A309(B).
- D.** Design, installation, operation, and maintenance requirements. The applicant shall comply with the applicable design, installation, operation, and maintenance requirements in R18-9-A312, R18-9-A313(A), and R18-9-A313(B).
- ~~**E.** Reference design.~~
1. An applicant may ~~design and install~~ use a RUCK® separated wastewater streams, denitrifying system achieving the performance requirements specified in subsection (B) by following a reference design on file with the Department.
 2. The applicant shall file a form provided by the Department for supplemental information about the proposed system with the applicant's submittal of the Notice of Intent to Discharge.
- ~~**D.** Alternative design.~~ An applicant may submit an alternative design to the RUCK® system if, following the requirements in R18-9-A312(G), the design achieves equal or better performance than that specified in subsection (B):
1. ~~The Department shall consider the submittal of an alternative design as one design change to establish the applicable fee under 18 A.A.C. 14.~~
 2. ~~The applicant shall file a form provided by the Department for supplemental information about the proposed system with the applicant's submittal of the Notice of Intent to Discharge.~~
 3. ~~If nitrogen reduction to a level from 15 to less than 30 milligrams per liter is proposed, the applicant shall ensure that the supplemental information includes specifications on system nitrogen reduction performance and corroborating third-party test data.~~

R18-9-E314. 4.14 General Permit: Sewage Vault, Less Than 3000 Gallons Per Day Design Flow

- A.** A 4.14 General Permit allows for the use of a sewage vault that receives sewage.
1. ~~An applicant pumping a sewage vault for disposal shall comply with state and local laws, rules, and ordinances.~~
 2. ~~1.~~ An applicant may use a sewage vault if ~~there is~~ a severe site or operational constraint that prevents installation of a conventional septic tank and disposal field system works or any other alternative provided by general permit on-site wastewater treatment facility allowed under this Article from being installed.
 3. ~~2.~~ An applicant may install a sewage vault as a temporary measure if ~~the applicant will install~~ connection to a sewer or installation of another on-site wastewater treatment facility occurs within two years of the connection or installation.
- B.** Performance. An applicant shall:
1. ~~not~~ Not allow a discharge from a sewage vault to the native soil or land surface. ~~The applicant shall, and~~
 2. Pump and dispose of vault contents at a sewage treatment facility or other sewage disposal mechanism allowed by law.
- C.** Notice of Intent to Discharge. The applicant shall comply with the Notice of Intent to Discharge requirements in R18-9-A301(B) and R18-9-A309(B).
- ~~**D.** Restrictions: Design requirements.~~ ~~An~~ In addition to the requirements in R18-9-A312, an applicant shall ~~not install a sewage vault:~~
1. Install a sewage vault with a capacity that is at least 10 times the daily design flow determined by R18-9-A314(4)(a)(i).
 2. If Use design elements to prevent the buoyancy of the vault if installed in an area where a high groundwater table impinges may impinge on the vault;
 3. Test the sewage vault for leakage using the procedure under R18-9-A314(5)(d). The tank passes the water test if the water level does not drop over a 24-hour period.
 4. Install an alarm or signal on the vault to indicate when 85 percent of the vault capacity is reached, and
 2. ~~5.~~ Unless the applicant has a service contract from a waste hauler Contract with a person who licensed a vehicle under 18 A.A.C. 13, Article 11 to periodically pump out the vault on a schedule specified within the contract to ensure that the vault is pumped before full; or
 3. If the capacity of the vault is less than 450 gallons per bedroom or 75 gallons per fixture unit, whichever is larger.
- E.** Installation, operation, and maintenance requirements. The applicant shall comply with the applicable installation, operation, and maintenance requirements in R18-9-A313(A) and (B).
- ~~**F.** Reference design.~~
1. An applicant may ~~design and install~~ use a sewage vault that achieves the performance requirements in subsection (B) by following a reference design on file with the Department.
 2. The applicant shall file a form provided by the Department for supplemental information about the proposed storage vault with the applicant's submittal of the Notice of Intent to Discharge.
- ~~**E.** Alternative design.~~ An applicant may submit an alternative to the reference design for a sewage vault if, following the requirements in R18-9-A312(G), the design achieves the performance requirements in subsection (B):
1. ~~The Department shall consider the submittal of an alternative design as one design change to establish the applicable~~

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fee under 18 A.A.C. 14.

2. The applicant shall file a form provided by the Department for supplemental information about the proposed storage vault with the applicant's submittal of the Notice of Intent to Discharge.

R18-9-E315. 4.15 General Permit: Aerobic System ~~with Subsurface Disposal~~, Less Than 3000 Gallons Per Day Design Flow

A. A 4.15 General Permit allows for ~~the construction and use of~~ an aerobic system that ~~consists of an aerator~~ uses aeration for treatment ~~and a subsurface absorption field for disposal of treated wastewater.~~

1. Definition. For purposes of this Section, an "aerobic system ~~with subsurface disposal~~" means a treatment unit consisting of components that:
 - a. ~~the mechanical introduction of~~ Mechanically introduce oxygen to wastewater, followed by
 - b. Typically provide clarification of the wastewater after aeration, and
 - c. Convey the treated wastewater by pressure or gravity distribution to a subsurface soil absorption field the disposal works.
2. An applicant may use an aerobic system ~~with subsurface disposal~~ if:
 - a. Enhanced ~~biochemical~~ biological processing is needed to treat wastewater with high organic content,
 - b. A soil or site condition is not adequate ~~to allow for~~ for installation of a standard septic tank and disposal ~~field works as prescribed in under R18-9-E302,~~
 - c. A highly treated ~~and disinfected~~ wastewater amenable to disinfection is needed, or
 - d. Nitrogen removal from the wastewater is needed and ~~the design meets other requirements of this general permit~~ removal performance of the system is documented according to subsection (C)(6).

B. Performance.

1. An applicant shall ensure that ~~an~~ the aerobic system ~~with subsurface disposal~~ is designed ~~on the basis so~~ so that the treated wastewater released to the native soil meets the following criteria:
 - 1-a. TSS of 30 milligrams per liter, 30-day arithmetic mean;
 - 2-b. BOD₅ of 30 milligrams per liter, 30-day arithmetic mean;
 - 3-c. Total nitrogen (as nitrogen) of 53 milligrams per liter, five-month arithmetic mean, or as low as 15 milligrams, five-month arithmetic mean per liter if documented under subsection (C)(6); and
 - 4-d. Total coliform level of 300,000 (Log₁₀ 5.5) colony forming units per 100 milliliters, 95th percentile.
2. An applicant may use an aerobic system that meets the following less stringent performance criteria if the aerobic technology is listed by the Department under R18-9-A309(E) and the Department bases its review and listing on the technology being less costly and simpler to operate when compared to other aerobic technologies:
 - a. TSS of 60 milligrams per liter, 30-day arithmetic mean;
 - b. BOD₅ of 60 milligrams per liter, 30-day arithmetic mean;
 - c. Total nitrogen (as nitrogen) of 53 milligrams per liter, five-month arithmetic mean, or as low as 15 milligrams, five month arithmetic mean per liter, if documented under subsection (C)(6); and
 - d. Total coliform level of 1,000,000 (Log₁₀ 7) colony forming units per 100 milliliters, 95th percentile.

C. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B) and R18-9-A309(B), an applicant shall submit:

1. The name and address of the aerobic system manufacturer;
2. The model number of the aerobic system;
- 1-3. Evidence of performance specified in subsection ~~(B)~~ (B)(1) or (B)(2), as applicable;
2. ~~The name and address of the treatment unit manufacturer;~~
3. ~~The model number;~~
4. A list of pretreatment components needed to meet performance requirements;
- 4-5. A copy of the manufacturer's ~~warranty~~ warranty and operation and maintenance recommendations to achieve performance ~~for over a 20-year operational life; and~~
- 5-6. If the aerobic system will be used for nitrogen removal reduction to a level from 15 to less than 53 milligrams per liter is proposed, from the wastewater, either:
 - a. Evidence of a valid product listing under R18-9-E309(E) indicating nitrogen removal performance, or
 - b. ~~specifications on system nitrogen reduction performance and corroborating~~ Specifications and third party test data corroborating nitrogen reduction to the intended level.

D. Design requirements. ~~An~~ In addition to the applicable requirements in R18-9-A312, an applicant shall ensure that:

1. ~~the~~ The wastewater is delivered to the aerobic treatment unit by gravity flow either directly or by a lift pump;
2. ~~The Director shall require an~~ An interceptor or other pretreatment device is incorporated if ~~needed~~ necessary to meet the performance criteria specified in subsection ~~(B)~~ (B)(1) or (2), or if recommended by the manufacturer ~~recommends a device for pretreatment~~ if a garbage disposal appliance is used;
3. A clarifier is provided after aeration for any treatment technology that achieves performance that is equal to or better than the performance criteria specified in subsection (B)(1); and
4. Ports for inspection and monitoring are provided to verify performance.

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- E. Installation requirements. ~~An~~ In addition to the applicable requirements in R18-9-A313(A), an applicant shall ensure that:
 - 1. The installation of the aerobic treatment components conforms to manufacturer's specifications that ~~are consistent~~ do not conflict with Articles 1 and 3 of this Chapter and to the design documents specified in the Provisional Verification of General Permit Conformance Construction Authorization issued under R18-9-A301(D)(1)(c); and
 - 2. Excavation and foundation work, and backfill placement is performed to prevent differential settling and adverse drainage conditions.
- F. Operation and maintenance requirements. The permittee shall:
 - 1. ~~follow~~ Follow the applicable requirements in ~~R18-9-A313~~ R18-9-A313(B), and
 - 2. Ensure that filters are cleaned and replaced as necessary.
- G. Reference design.
 - 1. An applicant may use an aerobic system that achieves the applicable performance requirements by following a reference design on file with the Department.
 - 2. An applicant using a reference design shall submit, with the Notice of Intent to Discharge, supplemental information specific to the proposed installation on a form approved by the Department.

R18-9-E316. ~~4.16 General Permit: Aerobic System with Surface Disposal, Less Than 3000 Gallons Per Day Design Flow~~ 4.16 General Permit: Nitrate-Reactive Media Filter, Less Than 3000 Gallons Per Day Design Flow

- ~~A.~~ A 4.16 General Permit allows an aerobic system that consists of an aerator for treatment and surface absorption field for disposal of treated wastewater.
 - 1. ~~Definition. For purposes of this Section, an "aerobic system with surface disposal" means:~~
 - a. ~~Mechanical introduction of oxygen to wastewater followed by clarification and disposal to the land surface, and~~
 - b. ~~The wastewater is disinfected using a technology authorized in R18-9-E320 before disposal to the land surface.~~
 - 2. ~~An applicant may use an aerobic system with surface disposal if:~~
 - a. ~~Enhanced biochemical processing is needed to treat wastewater with high organic content;~~
 - b. ~~A soil condition is not adequate to allow installation of a standard septic tank and disposal field as prescribed in R18-9-E302, or~~
 - e. ~~A highly treated and disinfected wastewater is needed.~~
- ~~B.~~ Performance. An applicant shall ensure that an aerobic system with surface disposal is designed on the basis that the treated wastewater released to the native soil meets the following criteria:
 - 1. TSS of 30 milligrams per liter, 30-day arithmetic mean;
 - 2. BOD₅ of 30 milligrams per liter, 30-day arithmetic mean;
 - 3. Total nitrogen (as nitrogen) of 53 milligrams per liter, five-month arithmetic mean;
 - 4. A total coliform level of Log₁₀ 0 colony forming units per 100 milliliters, 99th percentile. Disinfection is by a method established under R18-9-E320.
- ~~C.~~ Additional requirements. An applicant shall:
 - 1. Ensure that treated wastewater complies with any applicable National Pollution Discharge Elimination System permit limits;
 - 2. Prevent discharge of inadequately treated wastewater to the environment by means of a fail-safe mechanism, included in the system design; and
 - 3. Use sprinkler, bubbler heads, or other components that provide dispersal to optimize wastewater loading rates and prevent ponding on the land surface.
- ~~D.~~ Reference design.
 - 1. An applicant may design and install an aerobic system with surface disposal that achieves the performance requirements in subsection (B) by following a reference design on file with the Department.
 - 2. The applicant shall file a form provided by the Department for supplemental information about the proposed system with the applicant's submittal of the Notice of Intent to Discharge.
- ~~E.~~ Alternative design. An applicant may submit an alternative to the reference design for an aerobic system with surface disposal if, following the requirements in R18-9-A312(G), the design achieves the performance requirements in subsection (B).
 - 1. The Department shall consider the submittal of an alternative design as one design change to establish the applicable fee under 18 A.A.C. 14.
 - 2. The applicant shall file a form provided by the Department for supplemental information about the proposed system with the applicant's submittal of the Notice of Intent to Discharge.
- ~~A.~~ A 4.16 General Permit allows for the construction and use of a nitrate-reactive media filter receiving pretreated wastewater.
 - 1. Definition. "Nitrate-reactive media filter" means a treatment technology characterized by:
 - a. The application of pretreated, nitrified wastewater to a packed bed filter in a containment structure. A packed bed filter consists of nitrate-reactive media that receives pretreated wastewater under appropriate design and operational conditions, and
 - b. The ability of the nitrate-reactive filter to further treat the nitrified wastewater by removing total nitrogen by

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chemical and physical processes.

2. An applicant shall use a nitrate-reactive media filter with a treatment or disposal works to pretreat and dispose of the wastewater.
3. An applicant may use a nitrate-reactive media filter if nitrogen reduction is required under this Article.
- B.** Restrictions. The applicant shall not use any product to supply pretreated wastewater to the nitrate-reactive media filter unless:
 1. The product meets the pretreatment requirements for the filter based on product performance information in the product listing, and
 2. The product is listed by the Department as a reviewed product under R18-9-A309(E).
- C.** Performance. An applicant shall ensure that a nitrate-reactive media filter is designed so that it produces treated wastewater that does not exceed the following criteria:
 1. TSS of 30 milligrams per liter, 30-day arithmetic mean;
 2. BOD₅ of 30 milligrams per liter, 30-day arithmetic mean;
 3. Total nitrogen (as nitrogen) of 10 milligrams per liter, five-month arithmetic mean; and
 4. Total coliform level of 1,000,000 (Log₁₀ 6) colony forming units per 100 milliliters, 95th percentile.
- D.** Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B) and R18-9-A309(B), an applicant shall submit:
 1. The name and address of the filter manufacturer;
 2. The filter model number;
 3. The manufacturer's requirements for pretreated wastewater supplied to the nitrate-reactive media filter;
 4. The manufacturer's specifications for design, installation, and operation for the nitrate-reactive media filter system and appurtenances;
 5. The manufacturer's warranty for the nitrate-reactive media filter system and appurtenances;
 6. The manufacturer's operation and maintenance recommendations to achieve a 20-year operational life for the nitrate-reactive media filter system and appurtenances; and
 7. The manufacturer name and model number for all appurtenances that significantly contribute to achieving the performance required in subsection (C).
- E.** Design requirements. In addition to the applicable design requirements specified in R18-9-A312, an applicant shall ensure that:
 1. The nitrate-reactive media filter and appurtenances conform with manufacturer's specifications,
 2. The loading rate of pretreated wastewater to the nitrate-reactive media inlet surface meets the manufacturer's specification and does not exceed 5.00 gallons per day per square foot of media inlet surface area, and
 3. The bed packed with nitrate reactive media is at least 24 inches thick.
- F.** Installation requirements. In addition to the applicable requirements in R18-9-A313(A), an applicant shall ensure that:
 1. The nitrate-reactive media filter and appurtenances are installed according to manufacturer's specifications to achieve proper wastewater treatment, hydraulic performance, and operational life; and
 2. Anti-buoyancy devices are installed when high water table or extreme soil saturation conditions are likely during operational life of the facility.
- G.** Operation and maintenance requirements. In addition to the applicable requirements in R18-9-A313(B) and the manufacturer's specifications for the nitrate-reactive media filter, the permittee shall not dispose of corrosives or other materials that are known to damage the nitrate-reactive media filter system into the on-site wastewater treatment facility.

R18-9-E317. 4.17 General Permit: Cap System, Less Than 3000 Gallons Per Day Design Flow

- A.** A 4.17 General Permit allows ~~for the use of~~ a cap fill cover over a conventional ~~shallow~~ trench disposal ~~field works~~ receiving wastewater treated to a level equal to or better than that ~~provided by a 4.02 General Permit septic tank specified in R18-9-E302(B).~~
 1. Definition. For purposes of this Section, a "cap system" means a disposal technology characterized by:
 - a. A soil cap, consisting of engineered fill placed over a trench that is ~~reduced in depth compared to~~ not as deep as a ~~standard~~ trench allowed by R18-9-E302; and
 - b. A design that compensates for reduced trench depth by maintaining and enhancing the infiltration of wastewater into native soil through the trench sidewalls.
 2. An applicant may use a cap system if:
 - a. ~~there~~ There is little native soil overlying fractured or excessively permeable rock, or
 - b. ~~a~~ A high water table does not allow the minimum vertical separation to be met by a system authorized by R18-9-E302.
- B.** Performance. An applicant shall ensure that the design soil absorption rate, ~~disposal density,~~ and vertical separation complies with this Chapter for a ~~shallow~~ trench, based on the following performance, unless additional pretreatment is provided:
 1. TSS of 75 milligrams per liter, 30-day arithmetic mean;
 2. BOD₅ of 150 milligrams per liter, 30-day arithmetic mean;

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3. Total nitrogen (as nitrogen) of 53 milligrams per liter, five-month arithmetic mean; and
 4. Total coliform level of 100,000,000 (Log₁₀ 8) colony forming units per 100 milliliters, 95th percentile.
- C. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements in R18-9-A301(B); and R18-9-A309(B), an applicant shall submit specifications for the proposed cap fill material.
- D. Design requirements. In addition to the applicable requirements in R18-9-A312, an applicant shall ensure that:
1. ~~An applicant shall ensure that the~~ The soil texture from the natural grade to the depth of the layer or the water table that limits the soil for unsaturated wastewater flow is no finer than silty clay loam-;
 2. ~~An applicant shall ensure that cap~~ Cap fill material used is free of debris, stones, frozen clods, or ice, and is the same as or one soil group finer than that of the disposal site material, except that the applicant shall not use fill material finer than clay loam ~~shall not be used~~ as an additive-;
 3. Trench construction. ~~The applicant shall ensure that:~~
 - a. The trench bottom is at least 12 inches below the bottom of the disposal pipe and not more than 24 inches below the natural grade, and the trench bottom and disposal pipe are level;
 - b. The aggregate cover over the disposal pipe is ~~two~~ 2 inches thick and the top of the aggregate cover is level and not more than ~~nine~~ 9 inches above the natural grade;
 - c. The cap fill cover above the top of the aggregate cover is at least ~~nine~~ 9 inches but not more than 18 inches thick ~~and has sloped sides not more than one vertical to three horizontal~~. The applicant shall ensure that:
 - i. ~~The horizontal extent of the finished fill edges is at least 10 feet beyond the nearest trench sidewall or end-wall~~ The cap surface is protected to prevent erosion and sloped to route surface drainage around the ends of the trench; and
 - ii. ~~Intersecting fill surfaces are sloped to route surface drainage around the ends of the trench. If the top of the aggregate is at or below the original ground surface, the cap surface has side slopes not more than one vertical to three horizontal; or~~
 - iii. If the top of the aggregate is above the original ground surface, the horizontal extent of the finished fill edges is at least 10 feet beyond the nearest trench sidewall or endwall;
 - d. The criteria for trench length, bottom width and spacing, and disposal pipe size is the same as that for the ~~shallow~~ trench system prescribed in R18-9-E302;
 - e. Permeable geotextile fabric is placed on the aggregate top, trench end, and sidewalls extending above natural grade;
 - f. The native soil within the disposal site and the adjacent downgradient area to a 50-foot horizontal distance does not exceed a 12% percent slope if the top of the aggregate cover extends above the natural grade at any location along the trench length. The applicant shall ensure that the slope within the disposal site and the adjacent downgradient area to a 50-foot horizontal distance does not exceed 20% percent if the top of the aggregate cover does not extend above the natural grade;
 - g. The fill material is compacted to a density of 90% percent of the native soil if the invert elevation of the disposal pipe is at or above the natural grade at any location along the trench length;
 - h. At least one observation port is installed to the bottom of each cap fill trench;
 - i. The effective absorption area for each trench is the sum of the trench bottom area and the sidewall area. The height of the sidewall used for calculating the sidewall area is the vertical distance between the trench bottom and the lowest point of the natural land surface along the trench length; and
 - j. ~~The~~ If the applicant may apply the uses correction factors for soil absorption rate under R18-9-A312(D)(3) and minimum vertical separation under R18-9-A312(E), ~~if~~ additional wastewater pretreatment is provided.
- E. Installation requirements. ~~An~~ In addition to the applicable requirements in R18-9-A313(A), an applicant shall prepare the disposal site when high soil moisture is not present and equipment operations do not create platy soil conditions. The applicant shall:
1. Plow or scarify the fill area to disrupt the vegetative mat while avoiding smearing,
 2. Construct trenches as specified in subsection (D)(3),
 3. Scarify the site and apply part of the cap fill to the fill area and blend the fill with the scarified native soil within the contact layers, and
 4. Follow the construction design specified in the ~~Provisional Verification of General Permit Conformance~~ Construction Authorization issued under R18-9-A301(D)(1)(c).
- F. Operation and maintenance requirements. In addition to the applicable requirements ~~specified in R18-9-A313~~ R18-9-A313(B), the permittee shall inspect and repair the cap fill and other surface features as needed to ensure proper disposal function, proper drainage of surface water, and prevention of damaging loads on the cap.

R18-9-E318. 4.18 General Permit: Constructed Wetland, Less Than 3000 Gallons Per Day Design Flow

- A. A 4.18 General Permit allows for the use of a constructed wetland receiving wastewater treated to a level equal to or better than that ~~provided by a 4.02 General Permit septic tank~~ specified in R18-9-E302(B).
1. Definition. A constructed "Constructed wetland" is means a treatment technology characterized by a lined excavation, filled with a medium for growing plants and planted with marsh vegetation. The treated wastewater flows hori-

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zontally through the medium in contact with the aquatic plants.

~~2-a.~~ As the wastewater flows through the wetland system, additional treatment is provided by filtering, settling, volatilization, and evapotranspiration.

~~3-b.~~ The wetland system allows microorganisms to break down organic material and plants to take up nutrients and other pollutants.

~~4-c.~~ The wastewater treated by a wetland system is discharged to a subsurface soil disposal system.

~~5-2. A~~ An applicant may use a constructed wetland ~~is considered~~ if further wastewater treatment is needed before disposal.

B. Performance. An applicant shall ensure that a constructed wetland is designed ~~on the basis~~ so that it produces treated wastewater that meets the following criteria:

1. TSS of 20 milligrams per liter, 30-day arithmetic mean;
2. BOD₅ of 20 milligrams per liter, 30-day arithmetic mean;
3. Total nitrogen (as nitrogen) of 45 milligrams per liter, five-month arithmetic mean; and
4. Total coliform level of 100,000 (Log₁₀ 5) colony forming units per 100 milliliters, 95th percentile.

C. Notice of Intent to Discharge. The applicant shall comply with the Notice of Intent to Discharge requirements specified in R18-9-A301(B) and R18-9-A309(B).

D. Design, installation, operation, and maintenance requirements. The permittee shall comply with the applicable design, installation, operation, and maintenance requirements in R18-9-A312, R18-9-A313(A), and R18-9-A313(B).

~~E.~~ Reference design.

1. An applicant may ~~design and install~~ use a constructed wetland that achieves the performance requirements in subsection (B) by following a reference design on file with the Department.
2. The applicant shall file a form provided by the Department for supplemental information about the proposed constructed wetland with the applicant's submittal of the Notice of Intent to Discharge.

~~D.~~ Alternative design. An applicant may submit an alternative to the reference design for a constructed wetland if, following the requirements under R18-9-A312(G), the design achieves the performance requirements in subsection (B).

1. ~~The Department shall consider the submittal of an alternative design as one design change to establish the applicable fee under 18 A.A.C. 14.~~
2. ~~The applicant shall file a form provided by the Department for supplemental information about the proposed constructed wetland with the applicant's submittal of the Notice of Intent to Discharge.~~

R18-9-E319. 4.19 General Permit: Sand-Lined Trench, Less Than 3000 Gallons Per Day Design Flow

A. A 4.19 General Permit allows for the use of a sand-lined trench receiving wastewater treated to a level equal to or better than that ~~provided by a 4.02 General Permit septic tank~~ specified in R18-9-E302(B).

1. Definition. For purposes of this Section, a "sand lined trench" means a disposal technology characterized by:
 - a. Engineered placement of sand or equivalently graded glass in trenches excavated in native soil,
 - b. Wastewater dispersed throughout the media by pressure distribution technology as specified in R18-9-E304 using a timer-controlled pump in periodic uniform doses that maintain unsaturated flow conditions, and
 - c. Wastewater treated during travel through the media and absorbed into the native soil at the bottom of the trench.
2. An applicant may use a sand lined trench if:
 - a. The native soil is excessively permeable,
 - b. There is little native soil overlying fractured or excessively permeable rock, or
 - c. Reduction in setback distances; or minimum vertical separation is desired.

B. Performance. An applicant shall ensure that a sand lined trench is designed ~~on the basis~~ so that treated wastewater released to the native soil meets the following criteria:

1. TSS of 20 milligrams per liter, 30-day arithmetic mean;
2. BOD₅ of 20 milligrams per liter, 30-day arithmetic mean;
3. Total nitrogen (as nitrogen) of 53 milligrams per liter, five-month arithmetic mean; and
4. Total coliform level of 100,000 (Log₁₀ 5) colony forming units per 100 milliliters, 95th percentile.

C. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements in R18-9-A301(B) and R18-9-A309(B), an applicant shall submit specifications for the proposed media in the trench.

D. Design requirements. In addition to the applicable requirements in R18-9-A312, an applicant shall ensure that:

1. ~~An applicant shall ensure that media~~ The media used in the trench is 1 mineral sand, crushed glass, or cinder sand and that:
 - a. The media conforms to "Standard Specifications for Concrete Aggregates, C33-03," ~~(C-33-99a^{E1})~~, which is incorporated by reference in ~~R18-9-E308(D)(2)(a)~~ R18-9-E308(D)(2), "Standard Test Method for Materials Finer than 75-µm (No. 200) Sieve in Mineral Aggregates by Washing, C117-04 (2004)," ~~(C-117-95), approved March 15, 1995, published by the American Society for Testing and Materials, or an equivalent approved method approved by the Department. This information material is incorporated by reference and does not include any later amendments or editions of the incorporated matter material. Copies of the incorporated material are available for inspection at the Arizona Department of Environmental Quality, 1110 W. Washington, Phoenix, AZ~~

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~~85007 and the Office of the Secretary of State~~, or may be obtained from the American Society for Testing and Materials International, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959; and

- b. Sieve analysis complies with the "Standard Test Method for Materials Finer than 75- μ m (No. 200) Sieve in Mineral Aggregates by Washing, C11704," (~~C-117-95~~), which is incorporated by reference in subsection (D)(1)(a), or an equivalent ~~approved~~ method approved by the Department;

2. Trenches. ~~The applicant shall ensure that:~~

- a. Distribution pipes are capped on the end;

- a-b. The spacing between trenches is at least two times the ~~depth of the trench bottom below finished grade~~ distance between the bottom of the distribution pipe and the bottom of the trench or 5 feet, whichever is greater;

- b-c. The inlet filter media surface, wastewater distribution pipe, and bottom of the trench ~~is~~ are level and the maximum effluent loading rate is not more than 1.0 gallon per day per square foot of sand media inlet surface;

- e-d. The depth of sand below the gravel layer containing the distribution system is at least 24 inches;

- ~~e-c.~~ The gravel layer containing the distribution system is ~~five~~ 5 to 12 inches thick, at least 36 inches wide, and level;

- e-f. Permeable geotextile fabric is placed at the base of and along the sides of the gravel layer, as necessary. The applicant shall ensure that:

- i. Geotextile fabric is placed on top of the gravel layer, and

- ii. Any cover soil placed on top of the geotextile fabric is capable of maintaining vegetative growth while allowing passage of air;

- ~~f-g.~~ At least one observation port is installed to the bottom of each sand lined trench;

- ~~g-h.~~ If the trench is installed in excessively permeable soil or rock, at least ~~one~~ 1 foot of loamy sand is placed in the trench below the filter media. The minimum vertical separation distance is measured from the bottom of the loamy sand; and

- ~~h-i.~~ The trench design is based on the design flow, native soil absorption area ~~of~~ at the trench bottom, minimum vertical separation below the trench bottom, design effluent infiltration rate at the top of the sand fill, and the adjusted soil absorption rate for the final effluent quality; and

3. ~~The applicant shall ensure that the~~ dosing system consists of a timer-controlled pump, electrical components, and distribution network and that:

- a. Orifice spacing on the distribution piping does not exceed ~~four~~ 4 square feet of media infiltrative surface area per orifice, and

- b. The dosing rate is at least four doses per day and not more than 24 doses per day.

- E. Installation requirements. ~~An~~ In addition to the applicable requirements in R18-9-A313(A), an applicant shall ensure that the filter media ~~shall~~ is placed in the trench to prevent differential settling and promote a uniform density throughout of 1.3 to 1.4 grams per cubic centimeter.

- F. Operation and maintenance requirements. In addition to the applicable requirements ~~specified in R18-9-A313~~ R18-9-A313(B), the permittee shall ensure that:

1. The septic tank filter and pump tank are inspected and cleaned;

2. The dosing tank pump screen, pump switches, and floats are cleaned yearly and any residue is disposed of lawfully; and

3. Lateral lines are flushed and the liquid waste discharged into the treatment system headworks.

R18-9-E320. 4.20 General Permit: Disinfection Devices, Less Than 3000 Gallons Per Day Design Flow

- A. A 4.20 General Permit allows for the use of a disinfection device to reduce the level of harmful organisms in wastewater, provided the wastewater is pretreated to equal or better than the performance criteria in R18-9-E315(B)(1)(a). An applicant may use a disinfection device if:

1. The disinfection device kills the microorganisms by exposing the wastewater to heat, radiation, or a chemical disinfectant.

2. Some means of disinfection ~~require detention~~ is required before discharge.

3. A ~~disinfection device is considered if a~~ reduction in harmful microorganisms, as ~~measured~~ represented by the total coliform level, is needed for surface or near surface disposal of the wastewater or ~~if~~ reduction of the minimum vertical separation distance specified in R18-9-A312(E) is desired.

- B. Restrictions.

1. Unless the disinfection device is designed to operate without electricity, an applicant shall not install ~~a disinfection~~ the device if electricity is not permanently available at the site.

2. ~~This general permit~~ The 4.20 General Permit does not authorize a disinfection device that releases chemical disinfectants or disinfection byproducts harmful to plants or wildlife in the discharge area or causes a violation of an Aquifer Water Quality Standard.

- C. Performance. An applicant shall ensure that:

1. A fail-safe wastewater control or operational process is incorporated to prevent a release of inadequately treated wastewater;

- ~~1-2.~~ The required performance of a disinfection device ~~is dependent on~~ meets the level of disinfection needed for ~~a partic-~~

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~~that~~ the type of disposal; and produces effluent that:

- a. Is nominally free of coliform bacteria;
- b. Is clear and odorless, and
- c. Has a dissolved oxygen content of at least 6 milligrams per liter;

D.2. ~~For~~ Design requirements. An applicant shall ensure that an on-site ~~device~~ wastewater treatment facility with a disposal works designed to discharge to the land surface, ~~the disinfection device in conjunction with all preceding treatment processes produces treated wastewater that meets the following criteria~~ includes disinfection technology that conforms with the following requirements:

- a. ~~A total coliform level of Log₁₀-0 colony forming units per 100 milliliters, 99th percentile.~~
- b. ~~Dissolved oxygen content of at least six milligrams per liter;~~
- e. ~~Clear and odorless appearance.~~

1. Chlorine disinfection.

- a. Available chlorine is maintained as indicated in the following table:

<u>pH of Waste- water (s.u.)</u>	<u>Required Concentration of Available Chlorine in Wastewater (mg/L)</u>	
	<u>Wastewater to the Disinfection Device Meets a TSS of 30 mg/L and BOD₅ of 30 mg/L</u>	<u>Wastewater to the Disinfection Device Meets a TSS of 20 mg/L and BOD₅ of 20 mg/L</u>
<u>6</u>	<u>15 – 30</u>	<u>6 – 10</u>
<u>7</u>	<u>20 – 35</u>	<u>10 – 20</u>
<u>8</u>	<u>30 – 45</u>	<u>20 – 35</u>

- b. The minimum chlorine contact time is 15 minutes for wastewater at 70°F and 30 minutes for wastewater at 50°F, based on a flow equal to four times the daily design flow;

2. Contact chambers are watertight and made of plastic, fiberglass, or other durable material and are configured to prevent short-circuiting; and
3. For a device that disinfects by another method other than chlorine disinfection, dose and contact time are determined to reliably produce treated wastewater that is nominally free of coliform bacteria, based on a flow equal to four times the daily design flow.

D.E. ~~Operation and maintenance.~~ A permittee shall ensure that:

1. ~~If the disinfection device relies on the addition of chemicals for disinfection, ensure that the device is operated to minimize the discharge of disinfection chemicals while achieving the required level of disinfection; and~~
2. ~~Incorporate a fail-safe mechanism to prevent inadequately treated wastewater from being discharged. The disinfection device is inspected and maintained at least once every three months by a qualified person.~~

E. ~~Reference design.~~

1. ~~An applicant may design and install a disinfection device that achieves the performance requirements in subsection (C) by following a reference design on file with the Department.~~
2. ~~The applicant shall file a form provided by the Department for supplemental information about the proposed system with the applicant's submittal of the Notice of Intent to Discharge.~~

F. ~~Alternative design.~~ A permittee may submit an alternative to the reference design for a disinfection device if, following the requirements in R18-9-A312(G), the design achieves the performance requirements in subsection (C):

1. ~~The Department shall consider the submittal of an alternative design as one design change to establish the applicable fee under 18 A.A.C. 14.~~
2. ~~The applicant shall file a form provided by the Department for supplemental information about the proposed system with the applicant's submittal of the Notice of Intent to Discharge.~~

R18-9-E321. 4.21 General Permit: Sequencing Batch Reactor, Less Than 3000 Gallons Per Day Design Flow 4.21 General Permit: Surface Disposal, Less Than 3000 Gallons Per Day Design Flow

A. A 4.21 General Permit allows a sequencing batch reactor that consists of at least two vessels, a receiving vessel, and a process vessel, in which the key unit treatment processes, such as aeration and settlement, are sequenced one after the other in the process vessel:

1. ~~The treatment process is similar to that which occurs in aerobic systems described in other general permits except that in an aerobic system, separate vessels or partitions of the vessel are used for each unit treatment step.~~
2. ~~Sequencing batch reactors are considered for use if:~~

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- a. Enhanced biochemical processing is needed to treat wastewater with high organic content;
 - b. A soil condition is not adequate to allow installation of a standard septic tank and disposal field as prescribed in R18-9 E302, or
 - e. A more highly treated and disinfected wastewater is needed.
- B.** Performance. An applicant shall ensure that a sequencing batch reactor is designed on the basis that it produces treated wastewater that meets the following criteria:
- 1. TSS of 30 milligrams per liter, 30-day arithmetic mean;
 - 2. BOD₅ of 30 milligrams per liter, 30-day arithmetic mean;
 - 3. Total nitrogen (as nitrogen) of 53 milligrams per liter, five month arithmetic mean. If a total nitrogen level from 15 to 53 milligrams per liter is proposed, the applicant shall submit the specifications on system nitrogen reduction performance and corroborating third party test data with the Notice of Intent; and
 - 4. Total coliform level of 300,000 (Log₁₀ 5.5) colony forming units per 100 milliliters, 95th percentile.
- C.** Reference design.
- 1. An applicant may design and install a sequencing batch reactor that achieves the performance requirements in subsection (B) by following a reference design on file with the Department.
 - 2. The applicant shall file a form provided by the Department for supplemental information about the proposed system with the applicant's submittal of the Notice of Intent to Discharge.
- D.** Alternative design.
- 1. An applicant may submit an alternative to the reference design for a sequencing batch reactor that achieves equal or better performance than that specified in subsection (B), by following the requirements in R18-9-A312(G).
 - 2. The Department shall consider the submittal of an alternative design as one design change to establish the applicable fee under 18 A.A.C. 14.
 - 3. The applicant shall file a form provided by the Department for supplemental information about the
- A.** A 4.21 General Permit allows for surface application of treated wastewater that is nominally free of coliform bacteria produced by the treatment works of an on-site wastewater treatment facility.
- B.** Performance. An applicant shall ensure that the treated wastewater distributed for surface application meets the following criteria:
- 1. TSS of 30 milligrams per liter, 30-day arithmetic mean;
 - 2. BOD₅ of 30 milligrams per liter, 30-day arithmetic mean;
 - 3. Total nitrogen (as nitrogen) of 53 milligrams per liter, five-month arithmetic mean;
 - 4. Is nominally free of total coliform bacteria as indicated by a total coliform level of Log₁₀ 0 colony forming units per 100 milliliters, 95th percentile.
- C.** Restrictions. The applicant shall not install the disposal works if weather records indicate that:
- 1. Average minimum temperature in any month is 20°F or less, or
 - 2. Over 1/3 of the average annual precipitation falls in a 30-day period.
- D.** Design requirements. An applicant shall ensure that:
- 1. The land surface application rate does not exceed the lowest application rate as determined under R18-9-A312(D) minus no greater than 50 percent of the evapotranspiration that may occur during the month with the least evapotranspiration in any soil zone within the top 5 feet of soil;
 - 2. The design incorporates sprinklers, bubbler heads, or other dispersal components that optimize wastewater loading rates and prevent ponding on the land surface;
 - 3. The design specifies containment berms:
 - a. Compacted to a minimum of 95 percent Proctor;
 - b. Designed to contain the runoff of the 10-year, 24-hour storm event in addition to the daily design flow; and
 - c. Designed to remain intact in the event of a more severe rainfall event; and
 - 4. The design incorporates placement of signage on hose bibs, human ingress points to the surface disposal area, and at intervals around the perimeter of the surface disposal area to provide notification of use of treated wastewater and a warning against ingestion.
- E.** Installation requirements. An applicant shall ensure that installation of the wastewater dispersal components conforms to manufacturer's specifications that do not conflict with this Article and to the design documents specified in the Construction Authorization issued under R18-9-A301(D)(1)(c).
- F.** Operation and maintenance. In addition to the requirements specified in R18-9-A313(B), the permittee shall operate and maintain the surface disposal works to:
- 1. Prevent treated wastewater from coming into contact with drinking fountains, water coolers, or eating areas;
 - 2. Contain all treated wastewater within the bermed area; and
 - 3. Ensure that hose bibs discharging treated wastewater are secured to prevent use by the public.

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R18-9-E322. 4.22 General Permit: Subsurface Drip Irrigation Disposal, Less Than 3000 Gallons Per Day Design Flow

- A. A 4.22 General Permit allows for the construction and use of a subsurface drip irrigation disposal system works that receives high quality wastewater from an advanced on-site wastewater treatment facility ~~and dispenses it to dispense the wastewater to an irrigation system that is buried at a shallow depth in native soil. A 4.22 General Permit includes a pressure distribution system under R18-9-E304. The Director may require a thin layer of soil or engineered fill cover on the surface of the native soil, depending on wastewater quality delivered to the drip emitters.~~
1. The subsurface drip irrigation disposal system works is designed to disperse the treated wastewater into the soil under unsaturated conditions by pressure distribution and timed dosing. The applicant shall ensure that the pressure distribution system meets the requirements specified in R18-9-E304, and the Department shall consider whether the requirements of R18-9-E304 are met when processing the application under R18-9-A301(B).
 2. A subsurface drip irrigation disposal system works reduces the downward percolation of wastewater by enhancing evapotranspiration to the atmosphere.
 3. ~~Drip~~ An applicant may use a subsurface drip irrigation disposal systems are considered if works to overcome site constraints, such as high groundwater, shallow soils, slowly permeable soils, or highly permeable soils, are present at the site or if water conservation is needed.
 4. The subsurface drip irrigation disposal works includes pipe, pressurization and dosing components, controls, and appurtenances to reliably deliver treated wastewater to driplines using supply and return manifold lines.
- B. Performance. An applicant shall ensure that:
1. ~~A drip irrigation system is delivered treated wastewater that meets the following criteria Treated wastewater that meets the following criteria is delivered to a subsurface drip irrigation disposal works:~~
 - a. ~~A category "A" drip irrigation system requires wastewater delivered to the system that meets the following minimum water quality criteria: Performance Category A.~~
 - i. TSS of ~~40~~ 20 milligrams per liter, 30-day arithmetic mean;
 - ii. BOD₅ of ~~40~~ 20 milligrams per liter, 30-day arithmetic mean;
 - iii. Total nitrogen (as nitrogen) of 53 milligrams per liter, five-month arithmetic mean; and
 - iv. Total coliform level of ~~40 (Log₁₀ 1)~~ one colony forming units unit per 100 milliliters, 95th percentile; or
 - b. ~~A category "B" drip irrigation system requires wastewater delivered to the system that meets the following minimum water quality criteria: Performance Category B.~~
 - i. TSS of ~~20~~ 30 milligrams per liter, 30-day arithmetic mean;
 - ii. BOD₅ of ~~20~~ 30 milligrams per liter, 30-day arithmetic mean;
 - iii. Total nitrogen (as nitrogen) of 53 milligrams per liter, five-month arithmetic mean; and
 - iv. Total coliform level of ~~400 (Log₁₀ 2)~~ 300,000 (Log₁₀ 5.5) colony forming units per 100 milliliters, 95th percentile; and
 2. ~~A The subsurface drip irrigation system of category "A" or category "B" shall be works is designed to meet the following performance criteria:~~
 - a. ~~No Prevention of~~ ponding on the land surface, and
 - b. ~~Evapotranspiration of at least 50% of the emitted wastewater to the atmosphere, and~~
 - e-b. Incorporation of a fail-safe wastewater control mechanism or operational process to prevent inadequately treated wastewater from being discharged.
- C. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements in R18-9-A301(B), ~~and R18-9-A309(B), and R18-9-E304,~~ the applicant shall submit:
1. Documentation of the pretreatment method proposed to achieve the wastewater criteria specified in subsection (B)(1), such as the type of pretreatment system and the manufacturer's warranty;
 2. Initial filter and drip irrigation flushing settings;
 3. ~~Calculations of the site evaporation rate~~ Site evapotranspiration calculations if used to reduce the size of the disposal works; and
 4. ~~Design calculations, showing the number of perennial plants needed to achieve the required evapotranspiration rate; and~~
 - 5-4. If supplemental irrigation water is introduced to the subsurface drip system irrigation disposal works, the volume and volume percent of an identification of the cross-connection controls, backflow controls, and supplemental water sources.
- D. Design requirements. ~~An~~ In addition to the applicable design requirements specified in R18-9-A312, an applicant shall ensure that:
1. The design requirements of R18-9-E304 are followed, except that:
 - a. The requirement for quick disconnects in R18-9-E304(D)(1)(c) is not applicable, and
 - b. The applicant may provide the reserve volume specified in R18-9-E304(D)(3)(a)(iv) in an oversized treatment tank or a supplemental storage tank;
 - 1-2. Drip irrigation lines and emitters components and appurtenances are properly placed.

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- a. ~~Category "A"~~ Performance category A subsurface drip system irrigation disposal works. The applicant shall ensure that:
 - i. ~~Unless the manufacturer specifies deeper placement, lines and emitters are placed from six to 12 inches below the surface of the native soil; Driplines and emitters are placed to prevent ponding on the land surface, and~~
 - ii. ~~Soil is replaced over the top of the drip system components. Cover material and placement depth follow manufacturer's requirements to prevent physical damage or ultraviolet degradation of components and appurtenances; or~~
 - b. ~~Category "B"~~ Performance category B subsurface drip system irrigation disposal works. The applicant shall ensure that:
 - i. ~~Unless the manufacturer specifies otherwise, lines Driplines and emitters are placed more than six at least 6 inches below the surface of the native soil; and~~
 - ii. ~~A cover of soil or engineered fill is placed on the surface of the native soil to achieve a total emitter burial depth of at least 12 inches;~~
 - iii. ~~Cover material and placement depth follow manufacturer's requirements to prevent physical damage or ultraviolet degradation of components and appurtenances; and~~
 - iv. ~~The drip irrigation disposal works is not used for irrigating food crops;~~
- ~~2-3.~~ Wastewater is filtered upstream of the dripline emitters to remove particles 100 microns in size and larger;
 - ~~3-.~~ Applicable requirements under R18-9-E304 for pressure distribution systems are followed;
 - ~~4.~~ A pressure regulator assures that excessive operating pressure or surges do not damage is provided to limit the pressure of wastewater in the drip irrigation system disposal works;
 - ~~5.~~ Wastewater distribution pipe is Schedule 40 PVC or better, sized for a flow velocity during flushing of at least two feet per second meets the approved pressure rating in "Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120, D1785-04a (2004)," or "Standard Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe, Schedules 40 and 80, F441/F441M-02 (2002)," published by the American Society for Testing and Materials. This material is incorporated by reference and does not include any later amendments or editions of the incorporated material. Copies of the incorporated material are available for inspection at the Arizona Department of Environmental Quality, 1110 W. Washington, Phoenix, AZ 85007 or may be obtained from the American Society for Testing and Materials International, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959;
 - ~~6.~~ The system is designed to flush design flushes the subsurface drip irrigation disposal works components with wastewater at a minimum velocity of 2 feet per second, unless the manufacturer's manual and warranty specify another flushing practice. The applicant shall ensure that piping and valves appurtenances allow the wastewater to be pumped in a line flushing mode of operation with discharge returned to the treatment system headworks;
 - ~~7.~~ Air vacuum release valves are installed to prevent water and soil drawback into the emitter emitters;
 - ~~8.~~ Driplines. Emitters are spaced no more than two feet apart. The applicant shall ensure that:
 - a. ~~Drip lines Driplines~~ Driplines are placed from 12 to 24 inches apart unless variations in spacing allow preservation of existing trees and shrubs or enhance performance to overcome site limitations other configurations are allowed by the manufacturer's specifications;
 - b. Dripline installation and design requirements, including the allowable deflection, follow manufacturer's requirements;
 - c. The maximum length of a single dripline follows manufacturer's specifications to provide even distribution;
 - d. The dripline incorporates a herbicide to prevent root intrusion for at least 10 years;
 - e. The dripline incorporates a bactericide to reduce bacterial slime buildup;
 - f. Disinfection does not reduce the life of the bactericide or herbicide in the dripline;
 - g. Any return flow from a drip irrigation disposal works to the treatment works does not impair the treatment performance; and
 - h. When dripline installation is under subsection (E)(1)(b) or (c), backfill consists of the excavated soil or similar soil obtained from the site that is screened for removal of debris and rock larger than 1/2-inch;
 - ~~9.~~ Emitters.
 - a. Emitters are spaced no more than 2 feet apart, and
 - b. Emitters shall be are designed to discharge from 0.5 to 1.5 gallons per hour;
 - ~~9-10.~~ A suitable backflow prevention system is installed if supplemental water for irrigation is introduced to the pumping system. The applicant shall not introduce supplemental water to the treatment system works;
 - ~~10.~~ Plants are selected with regard to the ability of each species to maintain evapotranspiration rates and absorb nutrients;
 - ~~11.~~ Drip irrigation is used The drip irrigation disposal works is installed in soils graded classified as:
 - a. Sandy clay loam, clay loam, silty clay loam, or finer with weak platy structure or in soil with a percolation rate from 45 to 120 minutes per inch; and
 - b. Sandy clay loam, clay loam, silty clay loam, or silt loam with massive structure or in soil with a percolation rate from 31 to 120 minutes per inch; and

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- c. Other soils if an appropriate site-specific SAR is determined:
 - 12. The minimum vertical separation distances are 1/2 of those specified in R18-9-A312(E)(2) if the design evapotranspiration rate during the wettest 30-day period of the year is 50% percent or more of design flow, except that the applicant shall not use a minimum vertical separation distance shall not be less than one 1 foot;
 - 13. In areas where freezing occurs, the irrigation system is protected as recommended by the manufacturer;
 - 14. If drip irrigation components are used for a disposal works using a shaded trench constructed in native soil, the following requirements are met:
 - a. The trench is between 12 and 24 inches wide;
 - b. The trench bottom is between 12 and 30 inches below the original grade of native soil and level to within 2 inches per 100 feet of length;
 - c. Two driplines are positioned in the bottom of the trench, not more than 4 inches from each sidewall;
 - d. The trench with the positioned driplines is filled to a depth of 6 to 10 inches with decomposed granite or C-33 sand or a mixture of both, with mixture composition, if applicable, and placement specified on the construction drawing;
 - e. A minimum of 8 inches of backfill is placed over the decomposed granite or C-33 sand fill to an elevation of 1 to 3 inches above the native soil finished grade;
 - f. Observation ports are placed at both ends of each shaded trench to confirm the saturated wastewater level during operation; and
 - g. A separation distance of 24 inches or more is maintained between the nearest sidewall of an adjacent trench; and
 - 15. The soil absorption area used for design of a drip irrigation works is calculated using:
 - a. For a design that uses the shaded trench method described in subsection (D)(14), the bottom and sidewall area of the shaded trench not more than 4 square feet per linear foot of trench; or
 - b. For all other designs, the number of emitters times an area for each emitter where the emitter area is a square centered on each emitter with the side dimension equal to the emitter separation distance selected by the designer in accordance with R18-9-E322(D)(9)(a), excluding all areas of overlap of adjacent squares.
- E. Installation requirements. ~~An~~ In addition to the applicable requirements in R18-9-A313(A) and R18-9-E304, the applicant shall ensure that:
- 1. The irrigation pipe dripline is installed by:
 - a. ~~a~~ A plow mechanism that cuts a furrow, dispenses pipe, and covers the irrigation pipe dripline in one operation;
 - b. ~~or a~~ A trencher and hand tools that dig digs a trench not more than four 4 inches wide or less;
 - c. Digging the trench with hand tools to minimize trench width and disruption to the native soil; or
 - d. Without trenching, removing surface vegetation, scarifying the soil parallel with the contours of the land surface, placing the pipe grid, and covering with fill material, unless prohibited in subsection (D)(2)(b)(ii);
 - 2. Drip irrigation pipe has an incorporated herbicide to prevent root intrusion for at least 10 years and an incorporated bactericide to reduce bacterial slime build-up. The applicant shall store drip Drip irrigation pipe is stored to preserve the herbicidal and bactericidal characteristics of the pipe;
 - 3. Pipe deflection conforms to the manufacturer's requirements and installation is completed without kinking to prevent flow restriction;
 - 4. A shaded trench drip irrigation disposal works is installed as specified in the design documents used for the Construction Authorization; and
 - 5. The pressure piping and electrical equipment are installed according to the Construction Authorization in R18-9-A301(D)(1)(c) and any local building codes.
- F. Operation and maintenance requirements. ~~In addition to the applicable requirements in R18-9-A313 R18-9-A313 (B) and R18-9-E304, the permittee shall:~~
- 1. ~~test the~~ Test any fail-safe wastewater control mechanism or operational process quarterly to ensure proper operation to prevent discharge of inadequately treated wastewater; and
 - 2. Maintain the herbicidal and bacteriological capability of the drip irrigation disposal works.

R18-9-E323. 4.23 General Permit: 3000 to less than 24,000 Gallons Per Day Design Flow

- A. A 4.23 General Permit allows for the construction and use of an on-site wastewater treatment facilities facility with a design flow from 3000 gallons per day to less than 24,000 gallons per day or more than one on-site wastewater treatment facility on a property or on adjacent properties under common ownership with an combined design flow from 3000 to less than 24,000 gallons per day if all of the following apply:
 - 1. Except as specified in subsection (A)(3), the treatment and disposal works consists of technologies or designs that are covered under other general permits, but are sized larger to accommodate increased flows;
 - 2. The on-site wastewater treatment facility complies with all applicable requirements of Articles 1, 2, and 3 of this Chapter;
 - 3. The facility is not a system or a technology covered by one of the following general permits available for a design flow of less than 3000 gallons per day:
 - a. An aerobic system with subsurface or surface disposal; described in R18-9-E315;

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- ~~b. An aerobic system with surface disposal, described in R18-9-E316;~~
 - ~~e-b. A disinfection device, described in R18-9-E320; or~~
 - ~~d. A sequencing batch reactor, described in R18-9-E321; or~~
 - ~~e-c. A seepage pit or pits, described in R18-9-E302; and~~
- 4. The discharge of total nitrogen to groundwater is controlled.
 - a. An applicant shall:
 - i. Demonstrate that the nitrogen loading calculated over the property served by the on-site wastewater treatment facility, including streets, common areas, and other non-contributing areas, is not more than 0.088 pounds (39.9 grams) of total nitrogen per day per acre calculated at a horizontal plane immediately beneath the zone of active treatment of the on-site wastewater treatment facility including its disposal field; or
 - ii. Justify a nitrogen loading that is equally protective of aquifer water quality as the nitrogen loading specified in subsection (A)(4)(a)(i) based on site-specific hydrogeological or other factors.
 - b. For purposes of the demonstration in subsection (A)(4)(a)(i), the applicant may assume that 0.0333 pounds (15.0 grams) of total nitrogen per day per person is contributed to raw sewage and may determine the nitrogen concentration in the treated wastewater at a horizontal plane immediately beneath the zone of active treatment of the on-site wastewater treatment facility including its disposal field.
- B. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B) and R18-9-A309(B), an applicant shall submit:
 - 1. A performance assurance plan consisting of tasks, schedules, and estimated annual costs for operating, maintaining, and monitoring performance over a 20-year ~~useful service~~ operational life;
 - 2. Design documents and the performance assurance plan, signed, dated, and sealed by an Arizona-registered professional engineer;
 - 3. Any documentation submitted under the alternative design procedure in R18-9-A312(G) that pertains to achievement of better performance levels than those specified in the general permit for the corresponding facility with a design flow of less than 3000 gallons per day, or for any other alternative design, construction, or operational change proposed by the applicant; and
 - 4. A demonstration of total nitrogen discharge control specified in subsection (A)(4).
- C. Design requirements. The applicant shall comply with the applicable requirements in R18-9-A312 and the applicable general permits for the treatment works and disposal works used in the design of the on-site wastewater treatment facility.
- D. Installation requirements. The applicant shall comply with the applicable requirements in R18-9-A313(A) and the applicable general permits for the treatment works and disposal works used in the design of the on-site wastewater treatment facility.
- E. Operation and maintenance requirements. The applicant shall comply with the applicable requirements in R18-9-A313(B) and the applicable general permits for the treatment works and disposal works used in the design of the on-site wastewater treatment facility.
- ~~C.F.~~ Additional Verification of General Permit Conformance Discharge Authorization requirements. In addition to any other requirements, the applicant shall submit the following information before the ~~Verification of General Permit Conformance Discharge Authorization~~ is issued.
 - 1. A signed, dated, and sealed Engineer's Certificate of Completion in a format approved by the Department affirming that:
 - a. The project was completed in compliance with the requirements of this Section and as described in the plans and specifications, or
 - b. Any changes are reflected in as-built plans submitted with the Engineer's Certificate of Completion.
 - 2. The name of ~~a certified operator or the service company provider or certified operator~~ that is responsible for implementing the performance assurance plan.
- ~~D.G.~~ Reporting requirement. The permittee shall annually provide the Department with the following information on the anniversary date of the Discharge Authorization:
 - 1. A form signed by the certified operator or service ~~company~~ provider that:
 - a. Provides any data or documentation required by the performance assurance plan,
 - b. Certifies compliance with the requirements of the performance assurance plan, and
 - c. Describes any additions to the ~~system~~ facility during the year that increased flows and certifies that the flow did not exceed 24,000 gallons per day during any day; and
 - 2. Any applicable fee required by 18 A.A.C. 14.
- H. Facility expansion. If an expansion of an on-site wastewater treatment facility operating under this Section involves the installation of a separate on-site wastewater treatment facility on the property with a design flow of less than 3000 gallons per day, the applicant shall submit the applicable Notice of Intent to Discharge and fee required under 18 A.A.C. 14 for the separate on-site wastewater treatment facility.
 - 1. The applicant shall indicate in the Notice of Intent to Discharge the Department's file number and the issuance date of the Discharge Authorization previously issued by the Director under this Section for the property.

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2. Upon satisfactory review, the Director shall reissue the Discharge Authorization for this Section, with the new issuance date and updated information reflecting the expansion.
3. If the expansion causes the accumulative design flow from on-site wastewater treatment facilities on the property to equal or exceed 24,000 gallons per day, the Director shall not reissue the Discharge Authorization, but shall require the applicant to submit an application for an individual permit addressing all proposed and operating facilities on the property.

Table 1. Unit ~~Daily~~ Design Flows

Type of Facility Served <u>Wastewater Source</u>	<u>Applicable Unit</u>	<u>Sewage Design Flow per Applicable Unit, Gallons Per Day</u>
Airport	Passenger (average daily number) Employee	4 15
Apartment Building 1 bedroom 2 bedroom 3 bedroom 4 bedroom	Resident (if max. number fixed) Apartment Apartment Apartment Apartment	100 200 300 400 500
Auto Wash	Facility	Per manufacturer, if consistent with this Chapter
Bar/Lounge	Seat	30
Barber Shop	Chair	35
Beauty Parlor	Chair	100
Bowling Alley (snack bar only)	Lane	75
Camp Day camp, no cooking facilities Campground, overnight, flush toilets Campground, overnight, flush toilets and shower Campground, luxury Camp, youth, summer, or seasonal	Camping unit Camping unit Camping unit Person Person	30 75 150 100-150 50
Church Without kitchen With kitchen	Person (maximum attendance) Person (maximum attendance)	5 7
Country Club	Resident Member Nonresident Member	100 10
Dance Hall	Patron	5
Dental Office	Chair	500
Dog Kennel	Animal, maximum occupancy	15
<u>Dwelling</u> <u>For determining design flow for sewage treatment facilities under R18-9-B202(A)(9)(a) and sewage collection systems under R18-9-E301(D) and R18-9-B301(K), excluding peaking factor.</u>	<u>Person</u>	<u>80</u>

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<u>Dwelling</u> For on-site wastewater treatment facilities per R18-9-E302 through R18-9-E323:		
<u>Apartment Building</u>		
<u>1 bedroom</u>	<u>Apartment</u>	<u>200</u>
<u>2 bedroom</u>	<u>Apartment</u>	<u>300</u>
<u>3 bedroom</u>	<u>Apartment</u>	<u>400</u>
<u>4 bedroom</u>	<u>Apartment</u>	<u>500</u>
<u>Seasonal or Summer Dwelling (with recorded seasonal occupancy restriction)</u>	<u>Resident</u>	<u>100</u>
<u>Single Family Dwellings</u>	<u>see R18-9-A314(D)(1)</u>	<u>see R18-9-A314(D)(1)</u>
<u>Other than Single Family Dwelling, the greater flow value based on:</u>		
<u>Bedroom count</u>		
<u>1-2 bedrooms</u>	<u>Bedroom</u>	<u>300</u>
<u>Each bedroom over 2</u>	<u>Bedroom</u>	<u>150</u>
<u>Fixture count</u>	<u>Fixture unit</u>	<u>25</u>
<u>Fire Station</u>	<u>Employee</u>	<u>45</u>
<u>Hospital</u>		
All flows	Bed	250
Kitchen waste only	Bed	25
Laundry waste only	Bed	40
<u>Hotel/motel</u>		
Without kitchen	Bed (2 person)	50
With kitchen	Bed (2 person)	60
<u>Industrial facility</u>		
Without showers	Employee	25
With showers	Employee	35
Cafeteria, add	Employee	5
<u>Institutions</u>		
Resident	Person	75
Nursing home	Person	125
Rest home	Person	125
<u>Laundry</u>		
Self service	Wash cycle	50
Commercial	Washing machine	Per manufacturer, if consistent with this Chapter
<u>Office Building</u>	<u>Employee</u>	<u>20</u>
<u>Park (temporary use)</u>		
Picnic, with showers, flush toilets	Parking space	40
Picnic, with flush toilets only	Parking space	20
Recreational vehicle, no water or sewer connections	Vehicle space	75
Recreational vehicle, with water and sewer connections	Vehicle space	100
Mobile home/Trailer	Space	250

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Residence-		
Dwelling, per person (for sewer collection system design only)	Person	100
Dwelling, single family	Dwelling (3 bedrooms assumed)	450
Dwelling, per bedroom if count available	Bedroom	150
Dwelling, per fixture if count available	Fixture unit	25
Mobile home, family	Home lot	250
Mobile home, adults only	Home lot	150
Seasonal and summer-	Resident	100
Restaurant/Cafeteria	Employee	20
With toilet, add	Customer	7
Kitchen waste, add	Meal	6
Garbage disposal, add	Meal	1
Cocktail lounge, add	Customer	2
Kitchen waste disposal service, add	Meal	2
Restroom, public	Toilet	200
School		
Staff and office	Person	20
Elementary, add	Student	15
Middle and High, add	Student	20
with gym & showers, add	Student	5
with cafeteria, add	Student	3
Boarding, total flow	Person	100
Service Station with toilets	First bay	1000
	Each additional bay	500
Shopping Center, no food or laundry	Square foot of retail space	0.1
Store	Employee	20
Public restroom, add	Square foot of retail space	0.1
Swimming Pool, Public	Person	10
Theater		
Indoor	Seat	5
Drive-in	Car space	10

Note: Unit flow rates published in standard texts, literature sources, or relevant area or regional studies ~~shall be~~ are considered by the Department, if appropriate to the project.

ARTICLE 4. ~~AGRICULTURAL~~ NITROGEN MANAGEMENT GENERAL PERMITS

R18-9-401. Definitions

In addition to the definitions established in A.R.S. §§ 49-101 and 49-201 and A.A.C. R18-9-101, the following terms apply to this Article:

1. "Application of nitrogen fertilizer" means any use of a substance containing nitrogen for the commercial production of ~~a crop plants or plant~~. The commercial production of ~~a crop plants or plant~~ includes commercial sod farms and nurseries.
2. "Contact stormwater" means stormwater that comes in contact with animals or animal wastes within a concentrated animal feeding operation.
- ~~2-3.~~ "Crop or plant needs" means the amount of water and nitrogen required to meet the physiological demands of ~~the~~ a crop or plant to achieve a defined yield.
- ~~3-4.~~ "Crop or plant uptake" means the amount of water and nitrogen that can be physiologically absorbed by the roots and vegetative parts of a crop or plant following the application of water.
5. "Impoundment" means any structure, other than a tank or a sump, designed and maintained to contain liquids. A structure that stores or impounds only non-contact stormwater is not an impoundment under this Article.
6. "Liner" or "lining system" means any natural, amendment, or synthetic material used to reduce seepage of impounded liquids into a vadose zone or aquifer.

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7. “NRCS guidelines” means the United States Department of Agriculture, Natural Resources Conservation Service, National Engineering Handbook, Part 651 Agricultural Waste Management Field Handbook, Chapter 10, 651.1080, Appendix 10D – Geotechnical, Design, and Construction Guideline (November 1997). This material is incorporated by reference and does not include any later amendments or editions of the incorporated material. Copies of the incorporated material are available for inspection at the Arizona Department of Environmental Quality, 1110 W. Washington, Phoenix, AZ 85007 or may be obtained from the United States Department of Agriculture, Natural Resources Conservation Service at <ftp://ftp.wcc.nrcs.usda.gov/downloads/wastemgmt/AWMFH/awmfh-chap10-app10d.pdf>.

R18-9-402. Agricultural Nitrogen Management General Permits: Nitrogen Fertilizers

~~A person who engages in the application of~~ An owner or operator may apply a nitrogen fertilizer and is issued an agricultural general permit shall comply under this general permit without submitting a notice to the Director, if the owner or operator complies with the following agricultural best management practices:

1. Limit application of the fertilizer so that it meets projected crop or plant needs;
2. Time application of the fertilizer to coincide to maximum crop or plant uptake;
3. Apply the fertilizer by a method designed to deliver nitrogen to the area of maximum crop or plant uptake;
4. Manage and time application of irrigation water to minimize nitrogen loss by leaching and runoff; and
5. Use tillage practices that maximize water and nitrogen uptake by a crop plants or plant.

R18-9-403. Agricultural Nitrogen Management General Permits: Concentrated Animal Feeding Operations

~~A. A person who engages in or operates a~~ An owner or operator may discharge from a concentrated animal feeding operation and is issued an agricultural general permit shall comply with without submitting a notice to the Director, if the owner or operator complies with the following agricultural best management practices:

1. Harvest, stockpile, and dispose of animal manure from a concentrated animal feeding operation to minimize discharge of any nitrogen pollutant by leaching and runoff;
2. Control and dispose of nitrogen-contaminated water resulting from an activity associated with a concentrated animal feeding operation, up to a 25-year, 24-hour storm event equivalent, to minimize the discharge of any nitrogen pollutant; and
3. Following the requirements in subsection (B), construct and maintain a lining for an impoundment, used to contain process wastewater or contact stormwater from a concentrated animal feeding operation to minimize the discharge of any nitrogen pollutant; and
- 3-4. Close facilities a facility in a manner that will minimize the discharge of any nitrogen pollutant. If a liner was used in an impoundment:
 - a. Remove liquids and any solid residue on the liner and dispose appropriately;
 - b. Inspect any synthetic liner for evidence of holes, tears, or defective seams that could have leaked. If evidence of leakage is discovered:
 - i. Remove the liner in the area of suspected leakage;
 - ii. Sample potentially impacted soil, and
 - iii. Properly dispose of impacted soil or restore to background nitrogen levels;
 - c. Cover the liner in place or remove it for disposal or reuse if the impoundment is an excavated impoundment.
 - d. Remove and dispose of the liner elsewhere if the impoundment is bermed;
 - e. Grade the facility to prevent the impoundment of water; and
 - f. Notify the Department within 60 days following closure.

B. Lining requirements for concentrated animal feeding operation impoundments.

1. New impoundments. The owner or operator shall:
 - a. Follow the NRCS guidelines for any newly constructed impoundment or an impoundment first used after November 12, 2005, and
 - b. Use a coefficient of permeability of 1×10^{-7} centimeters per second or less as acceptable liner performance. The owner or operator may include up to 1 order of magnitude reduction in permeability from manure sealing in impoundments that hold wastes having manure as a significant component.
2. Impoundments already in use.
 - a. The owner or operator shall maintain the existing seal for any impoundment first used before November 12, 2005.
 - b. If any of the following conditions exist at a concentrated animal feeding operation, the Director shall send a notice requiring the owner or operator to reassess the performance of the lining system:
 - i. The concentrated animal feeding operation is located within a Nitrogen Management Area designated under R18-9-A317; or
 - ii. Existing conditions or trends in nitrogen loading to an aquifer will cause or contribute to an exceedance of an Aquifer Water Quality Standard for a nitrogen pollutant at the point of compliance determined under A.R.S. § 49-244, based on the following information:
 - (1) Existing contamination of groundwater by nitrogen species;

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- (2) Existing and potential impact to groundwater by sources of nitrogen other than the concentrated animal feeding operation;
 - (3) Characteristics of the soil surface, vadose zone, and aquifer;
 - (4) Depth to groundwater;
 - (5) The estimated operational life of the impoundment;
 - (6) Location and characteristics of existing and potential drinking water supplies;
 - (7) Construction material and design of existing impoundment structure; and
 - (8) Any other information relevant to determining the severity of actual or potential nitrogen impact on the aquifer.
 - c. The owner or operator shall, within 90 days of the Director's notice, submit either:
 - i. A report to the Department demonstrating consistency with NRCS guidelines and the acceptable liner performance criteria established in subsection (B)(1)(b); or
 - ii. Plans and a schedule to upgrade the liner for the impoundment to meet the NRCS guidelines and the acceptable liner performance criteria in subsection (B)(1)(b). The Director may provide additional time for the submittal of the plans and a schedule for upgrade, if the owner or operator demonstrates that technical or financial assistance to develop the plans is needed.
 - d. Preliminary decision.
 - i. Within 90 days from the date of receipt, the Director shall review the report or the plans submitted under subsection (B)(2)(c) and provide to the owner or operator a preliminary decision on the submittal.
 - ii. The owner or operator may, within 30 days of the preliminary decision, submit written comments and supporting information to the Director on the preliminary decision.
 - iii. The Director shall evaluate any comments on the preliminary decision and supporting information and, within 90 days of receipt of the comments and information, make a final decision.
 - e. Final decision.
 - i. If the Director determines that the owner or operator has demonstrated that the lining system meets NRCS guidelines and the acceptable performance criteria in subsection (B)(1)(b), no additional action is necessary.
 - ii. If the Director approves the plans and schedules under subsection (B)(2)(c)(ii), the owner or operator shall implement the plans within the time-frame specified in the approved schedule.
 - ii. If the Director determines that the owner or operator failed to demonstrate that the lining system meets NRCS guidelines and the acceptable performance criteria in subsection (B)(1)(b) or that the schedule to upgrade the lining is not acceptable, the owner or operator shall upgrade the lining system within a time-frame specified by the Director.
 - iv. The owner or operator may appeal the Director's decision under A.R.S. Title 41, Chapter 6, Article 10.
 - 3. Notification requirement. The owner or operator of any lined impoundment shall either:
 - a. Notify the Department of the type of liner that was used to line each impoundment by February 19 of each year following either:
 - i. The first use of an impoundment not used before November 12, 2005; or
 - ii. Completion of a liner upgrade required under this Section for an impoundment used before November 12, 2005; or
 - b. Include the information required in subsections (B)(3)(a)(i) and (ii) in the next annual report submitted for the AZPDES Concentrated Animal Feeding Operation General Permit, issued under 18 A.A.C. 9, Article 9, Part C.

R18-9-404. Revocation of Coverage under a Nitrogen Management General Permit

- A.** The Director may revoke coverage under a nitrogen management general permit and require the permittee to obtain an individual permit under 18 A.A.C. 9, Article 2, if the Director determines that the permittee failed to comply with the best management practices under R18-9-403.
- B.** Notification.
 - 1. If coverage under the nitrogen management general permit is revoked under subsection (A), the Director shall notify the permittee by certified mail of the decision according to the notification and hearing procedures in A.R.S. Title 41, Chapter 6, Article 10. The notification shall include:
 - a. A brief statement of the reason for the decision.
 - b. The effective revocation date of the general permit coverage, and
 - c. A statement of whether the discharge shall cease immediately or whether the discharge may continue until the individual permit is issued, and
 - 2. If the Director requires a person to obtain an individual permit, the notification shall include:
 - a. An individual permit application form, and
 - b. A deadline between 90 and 180 days after receipt of the notification for filing the application.
- C.** When the Director issues an individual permit to an owner or operator of a facility covered under a nitrogen management general permit, the coverage under the nitrogen management general permit is superseded by the individual permit allowing the discharge.